UNION OF SOUTH AFRICA

ANNUAL REPORT

OF THE

Department of Public Health

Year ended 30th June, 1945

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DEPARTMENT OF PUBLIC HEALTH

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DEPARTMENT OF PUBLIC HEALTH.

Report for the Year ended 30th June, 1945.

THE HONOURABLE THE MINISTER OF HEALTH.

SIR,

I have the honour to submit, for your information, the following brief report on the work of the Department of Public Health for the year ended 30th June, 1945.

INTRODUCTORY.

The year under review has been marked by several severe outbreaks of infectious disease. The typhus fever outbreak still continued but on a much diminished scale. With increased staff it has been possible to seek out foci of infection, which are widely scattered throughout the country. The field test for typhus, supplied by the South African Institute for Medical Research has proved most useful and enabled a diagnosis to be made quickly. The outbreak is definitely on the wane, but with the severe drought and consequent lack of foodstuffs, a position which in certain areas is probably worse than any former food shortage, it may well be that the disease will linger on much longer than would have been the case had times been normal. With the advent of D.D.T. it will be easier to control outbreaks but the fact still remains that typhus fever follows times of depression and want. The present outbreak has not been nearly so severe as former ones and with better facilities for diagnosis the statistics in this outbreak probably reflect a much truer picture than in former outbreaks when many cases were never even seen much less notified.

For the year ended 30th June, 1945, 2,909 cases of typhus were notified with 566 deaths, of which there were 113 cases with 8 deaths among Europeans. For the year ended 30th June, 1944, 5,623 cases were notified with 2,600 deaths, of which 41 cases and 3 deaths occurred in Europeans.

SMALLPOX.

Smallpox has existed in the Union for a very long time. It has been of a comparatively mild type and has often been referred to as Amaas. During the year under review a much more virulent form of smallpox appeared. It cannot be definitely stated whether or not a new strain, the Asiatic strain, was introduced or whether as happens in all infectious diseases, the infections became more virulent.

The major incidence was in Natal where tribal customs and religious objections to vaccination had resulted in a population very largely unprotected against the disease. There were 3,317 cases and 305 deaths notified of which 2,203 cases and 284 deaths occurred in Natal. Most of the cases were in non-Europeans ; 49 cases and 15 deaths occurred among Europeans of which 27 cases and 14 deaths were recorded from Natal.

Prompt steps were taken to deal with the outbreak and teams of vaccinators combed the kraals. It often happened that acute cases of smallpox were hidden within a stone's throw of a vaccination centre. The vaccination campaign continues and should continue.

Smallpox, probably the most loathsome and infectious of all diseases, is preventable. In Natal it was found necessary to apply section 100 of the Public Health Act whereby vaccination is made compulsory.

While typhus and smallpox are preventable and measures can be taken to limit their spread, a much more serious disease appeared in epidemic form during the year, a disease about whose mode of spread and prevention very little is known, namely, *poliomyelitis anterior acuta* or infantile paralysis. During the first world war this disease also appeared in epidemic form in South Africa but as it was not then a notifiable disease it is not possible to state how severe it was. That it was severe is evidenced by the number of persons to be seen in the streets with paralysis which would appear to date from about 1917.

A Johannesburg journalist, Mr. Eric Rosenthal, contributed an article to the " Star " giving some details of the 1917–1918 epidemic.

The late Dr. Baumann is reported to have said:

> " Poliomyelitis has probably been in existence in South Africa as in other parts of the world. Ever since I have practiced in Johannesburg I have each year met with isolated cases at almost any season and during the hot weeks in particular. This summer (1917–1918) for the first time in the history of the country as far as any records show, we have been visited with poliomyelitis in an extensive epidemic form ".

In early 1918 the epidemic had assumed such proportions that on the recommendation of the Acting Medical Officer of Health, Johannesburg, the disease was made notifiable in that town as from 15th February, 1918. It is not known how many cases occurred before that date, but there were 181 cases with 20 deaths in Johannesburg between February and August, 1918.

Mr. Rosenthal concludes his article as follows:

> " Mysteriously as it had come, the infantile paralysis epidemic of 1918 departed again ".

Infantile paralysis has never entirely disappeared and each year since cases have been reported. Three cases only were reported in 1924 and 92 in 1941 with varying numbers for the other years. In the 1944–45 epidemic there were 1,380 cases with 104 deaths. A more detailed analysis will be found in the relevant section of this report.

It is probably not merely a coincidence that infantile paralysis should assume epidemic proportions in widely scattered countries during war years.

In this war there have been severe epidemics of the disease in the United States of America in 1943–44, when over 13,000 cases were notified, in Mauritius when during March and April, 1945, 1,071 were notified, in Malta where there were 483 cases in 1942, and in Central America there were 64 in El Salvador. In 1943 there was an epidemic of poliomyelitis in Central Africa affecting the Belgian Congo especially.

Unfortunately in spite of continued and prolonged research we still have no definite knowledge about the routes of infection and transmissibility.

The measures taken to deal with the outbreak have been based on the fact that poliomyelitis virus has been found in swabs from the naso-pharynx of human beings and also it has been recovered from sewage effluent which would indicate passage through the human bowel. The period of infectivity is not definitely known but although it is probably shorter, a period of three weeks is considered possible and cases have been treated for that period in isolation hospitals. After that period they have been transferred to special orthopaedic hospitals under Provincial control.

An endeavour is being made to trace up every surviving case to ascertain the degree of residual paralysis, if any.

As indicated in last year's report, the Department has found it essential to assume executive functions and even with limited staff it has been possible to deal with problems and difficulties which, had the Department not stepped in, would not have been tackled. The need for regionalization of health services, so that every area of the country is under constant control where immediate help can be given when outbreaks of disease occur, is a matter of urgency. In the Northern Transvaal a much expanded anti-malaria service has been provided where the Department is itself carrying out the measures necessary to control and eradicate malaria. Extensive field work has been carried out during the winter months to clear up the winter breeding places of the mosquito vectors, and experiments have now been completed in fitting up aeroplanes to spray oil with D.D.T. from the air.

This aerial method of attack is still in the experimental stage, and will be supplementary to the methods which have given good results and which are being rapidly expanded.

TUBERCULOSIS.

Steady progress has been made in getting schemes ready for building. Now that the war is over military hospitals and camps will become available as tuberculosis hospitals. Part of the Springfield hospital of 1,200 beds at Durban will be available before the end of 1945 and the whole hospital soon after. Claims have been made for Westlake Hospital, Cape Town, with 330 beds, West End Hospital, Kimberley, and a camp at Matatiele capable of accommodating some 700 patients. It is sad to have to record that there are nearly 300 beds now standing empty because nurses are not available. Various suggestions have been made to increase nursing personnel, but it will be necessary to train nurse aids and orderlies to help during the period until the more fully trained nurses are available. It is proposed to appoint a full-time Tuberculosis Officer who will be in charge of a division of tuberculosis within the Department.

When the schemes now in hand are completed there will be accommodation for tuberculosis sufferers near their own homes all over the country, while each area will be served by a full-time tuberculosis officer.

Priority has been given to housing but it is hoped that the essential work of providing adequate accommodation for tuberculosis sufferers, so that every case can be admitted to hospital without delay and treated there as long as necessary, will not be deferred for longer than can possibly be avoided. Apart from providing accommodation and treatment for the actual cases, every effort is being made to prevent their occurrence.

The Nutrition Council and the Nutrition Section of the Department have been most active. More and more as time goes on it is possible to see how very seriously large sections of the population are affected by malnutrition. Nutritional oedema, pellagra, scurvy, in fact all the diseases of malnutrition are to be found in the Union. These are *not* clinical curiosities, but widespread everyday occurrences.

It can truly be said "The hungry sheep look up and are not fed". The functions of the Department of Public Health are chiefly only advisory, and the fact of this widespread malnutrition has been stressed on every possible occasion, but still this blot remains and will remain until sufficient foodstuffs are produced at a price to make them available to the poorest.

HOUSING.

This problem is most serious. Under the old Central Housing Board money was made available to local authorities to enable them to provide housing for the people in their areas. The provision of houses has been slow and with the end of the war there is a demand for housing from a different class of the community. Sufficient funds have been provided but progress is slow.

The National Housing and Planning Commission has embarked on a scheme under which the Government itself is undertaking the responsibility for construction of houses.

While there are so many diseases to fight against in the Union, there are others which are present in Africa, but so far have not appeared in the Union, viz., sleeping sickness and yellow fever. A second survey of the tsetse fly position was made during the winter of 1945. There has been no increase of the threat to the Union and with the experiments to eradicate tsetse fly by aerial spraying with D.D.T., it may be that sleeping sickness will be entirely prevented from reaching the Union. During the year Dr. Goodner from the Rockefeller Institute at Entebbe visited the Union and advised especially on the production of yellow fever vaccine which is now being produced for the Department of Public Health at the South African Institute for Medical Research, Johannesburg. Later arrangements were made to invite Dr. Mahaffy to visit the Union and advise on steps to be taken to prevent the introduction of yellow fever into the Union. It is known from mouse protection tests that yellow fever has been present in Northern Bechuanaland although no human cases have been known to occur. It will be remembered that sleeping sickness has occurred at Maun in Northern Bechuanaland.

During the year a severe outbreak of plague occurred in Bechuanaland and officers of the Union Department of Health had an opportunity of investigating this. Just as disease knows no colour bar, it also knows no territorial boundary and it is essential that we in the Union should know what is happening in the neighbouring territories. As regards our own plague position it has been possible with increased staff to much more accurately ascertain the danger areas. A scheme is being considered for an expansion in the anti-plague campaign.

VITAL STATISTICS OF EUROPEAN POPULATION FOR CALENDAR YEAR 1944.

The European birth rate was 26·63 per thousand of the population which is the highest since 1923. The European death rate of 9·33 per thousand is the lowest on record.

There was a slight rise in the death rate from tuberculosis, 34·17 per 100,000 of the European population as compared with 33·16 for 1943. The increase is entirely in the rates for males, except in the Cape Province where the rate for females has also increased.

The infantile mortality rate of 42·53 per 1,000 live births and the maternal mortality rate of 2·20 are the lowest on record.

There is a fall in the death rate for pneumonia and bronchitis to 84·78 per 100,000.

Increases are again to be found in the deaths from diseases of the heart and circulatory system and cancer which are 214·83 and 119·96 per 100,000 respectively.

MENTAL HYGIENE.

Mental hygiene now falls under the Department of Public Health. The Commissioner for Mental Hygiene submits a separate report for each calendar year which is laid upon the tables of both Houses of Parliament.

The acute shortage of accommodation in the mental hospitals has been stressed in every report for many years now and it is hoped that the proposed new mental hospitals in the Cape will be undertaken during the coming year.

GENERAL.

The work of the Department has steadily increased and its expenditure has risen even during the war years. In 1940–41 the expenditure on the Public Health Vote was £904,127 and on behalf of other Departments and Administrations £94,980, just under £1,000,000 in all. For the year ended 30th June, 1945, the expenditure on the Public Health Vote was £1,338,784 and on behalf of other Departments and Administrations £265,260, a total of £1,604,064, an increase of over £600,000 as compared with the 1940–41 expenditure.

This is the last report I will write as I am due to retire before the next one is due.

The work of the war years has been hard and often discouraging. There has been a constant shortage of staff and an uncertainty about the world position, that has made the task of the Head of the Department of Public Health no easy one. Now that the war is over and a new set-up has been envisaged progress should now be much faster and with the people now thoroughly health-minded there should be much more co-operation in attaining those aims and objects which in the past have seemed far off. We are standing on the threshold of a brave new world to watch the dawn of a brighter and better day.

II.—VITAL STATISTICS.

The outstanding feature of the vital statistics is the low maternal mortality rate. This rate has decreased considerably during the last ten years, but the figure of 2·2 now recorded is considerably lower than that for any previous year. The infantile mortality rate is also considerably lower than any figure previously recorded. Further reference is made to these two rates in the appropriate section of the report.

The steady rise in the death rates for both cancer and diseases of the heart and circulatory system have been maintained. As pointed out in previous annual reports, in our present state of knowledge, these diseases are not preventable to anything like the same degree as the infectious diseases which usually cause death at an earlier age. It is, therefore, inevitable that as the infectious diseases, many of which are due to environmental conditions, are controlled in an increasing measure, the average

TABLE 1.—UNION OF SOUTH AFRICA: SUMMARY OF VITAL STATISTICS OF EUROPEAN POPULATION, 1920–1944.

Calendar Year.	European Population (estimated).	Birth Rate per 1,000 of Population.	Death Rate per 1,000 of Population.		Diseases of Heart and Circulatory System.	Pneumonia and Bronchitis.	Cancer.	Death Rate per 100.000 of Population from Tuberculosis (all forms).§								Percentage of Total Deaths, the Cause of which was Medically Certified.	Infantile Mortality Rate (Deaths of Infants under One Year per 1,000 Live Births Registered).	Maternal Mortality Rate (Deaths of Mothers in connection with Pregnancy or Childbirth Per 1,000 Live Births Registered).	Survival Rate or Rate of Natural Increase (Excess of Births over Deaths per 1,000 of Population).
								Cape Province.		Transvaal.		Orange Free State.		Natal.		Total.				
			Actual or Crude.	Standardized.*				Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.					
1920	1,499,911	28·97	11·09	12·15	95·67†	113·87†	58·87†	¶	¶	¶	¶	¶	¶	¶	¶	45·93†	79·78	90·07	4·10†	17·88
1921	1,519,488‡	28·44	10·41	11·43	102·91	136·15	69·09	¶	¶	¶	¶	¶	¶	¶	¶	58·26	80·76	77·09	4·94	18·03
1922	1,556,241	27·52	9·48	10·41	97·99	127·24	70·88	¶	¶	¶	¶	¶	¶	¶	¶	47·74	82·96	72·91	5·21	18·04
1923	1,579,733	26·70	9·77	10·65	108·50	120·72	78·94	55·03	52·43	74·45	21·12	19·91	17·17	41·62	40·45	46·46	82·77	74·42	5·22	16·93
1924	1,610,774	26·29	9·62	10·44	123·92	123·79	76·36	67·04	82·82	84·54	23·41	14·71	22·25	50·93	36·38	51·59	84·74	73·73	4·75	16·67
1925	1,637,472	26·51	9·39	10·15	128·86	97·04	72·86	65·65	62·14	74·27	21·84	30·01	12·59	73·89	40·51	52·70	86·45	68·39	5·62	17·12
1926	1,676,660‡	26·16	9·59	10·28	127·21	113·44	71·18	58·97	57·36	95·54	24·41	24·89	16·22	49·23	39·85	53·41	87·76	64·82	4·56	16·57
1927	1,708,955‡	25·95	9·73	10·34	122·76	110·42	73·20	61·36	59·87	78·78	17·87	24·58	12·98	71·95	28·73	50·50	89·93	70·62	4·80	16·22
1928	1,738,937	25·77	10·15	10·69	133·53	127·52	77·72	60·72	56·51	85·08	20·72	31·76	15·74	54·99	25·55	50·95	89·93	70·49	4·98	15·62
1929	1,767,719	26·15	9·51	9·98	127·11	104·04	77·44	57·98	51·63	72·48	18·08	22·16	17·47	44·58	22·56	45·37	90·19	64·22	5·26	16·64
1930	1,797,900	26·44	9·69	10·08	132·33	112·87	82·62	62·20	50·58	73·84	18·96	23·47	6·87	51·74	31·51	46·78	91·15	66·84	5·26	16·75
1931	1,829,300	25·38	9·37	9·56	131·53	103·75	85·55	55·79	55·75	64·26	15·05	24·81	11·92	54·26	26·35	44·22	90·46	63·07	4·70	16·01
1932	1,859,400	24·17	9·97	9·98	137·52	113·75	89·06	51·02	54·55	59·19	16·40	20·02	15·83	58·63	24·66	42·33	90·84	68·57	5·31	14·20
1933	1,890,300	23·55	9·35	9·27	142·52	100·30	95·33	57·48	54·40	52·21	14·58	22·86	6·90	46·86	19·63	40·68	91·45	61·01	4·81	14·20
1934	1,914,700	23·44	9·68	9·55	156·21	94·53	92·39	50·85	50·23	52·30	16·50	19·03	12·77	50·31	26·97	39·54	91·91	60·79	5·99	13·76
1935	1,973,700	24·18	10·45	10·28	169·58	131·98	95·76	50·85	56·52	49·18	16·83	14·63	26·16	43·39	28·72	40·43	92·55	62·81	4·73	13·72
1936	2,008,700	24·21	9·57	9·50	154·38	106·19	97·28	46·61	44·72	45·28	12·57	18·65	9·08	45·03	15·69	34·40	92·88	59·06	5·10	14·64
1937	2,043,700	24·90	10·08	9·66	172·97	113·62	106·57	47·19	50·17	41·72	16·39	13·74	15·14	44·56	27·78	36·40	93·17	56·57	4·38	14·81
1938	2,081,400	25·01	9·48	8·93	153·55	102·53	103·44	54·90	51·75	42·42	13·54	18·65	11·10	60·54	28·28	38·34	94·20	51·69	3·69	15·53
1939	2,116,500	25·29	9·40	8·75	170·42	90·05	104·75	54·44	43·81	43·05	14·32	21·59	10·09	52·79	17·87	36·19	94·32	49·48	3·61	15·88
1940	2,152,700	25·29	9·42	8·65	190·18	89·93	102·80	52·03	50·68	37·74	11·23	12·76	12·11	57·29	18·55	35·12	94·75	50·02	3·37	15·87
1941	2,188,200	24·94	9·47	‖	197·61	86·14	109·40	54·83	43·83	38·11	11·90	10·00	11·11	48·62	25·45	34·26	94·95	50·93	2·49	15·47
1942	2,230,000	25·18	9·35	‖	199·69	81·97	109·33	59·71	44·95	38·20	14·95	15·00	7·07	54·05	24·11	36·19	94·83	47·52	2·83	15·83
1943	2,265,000	25·94	9·53	‖	211·92	92·23	109·98	51·67	45·11	36·52	10·25	12·00	13·13	46·90	26·32	33·16	95·25	45·60	2·85	16·41
1944	2,300,000	26·63	9·33	‖	214·83	84·78	111·96	55·32	51·90	31·87	12·17	17·00	5·05	55·65	12·07	34·17	95·03	42·53	2·20	17·30

* The rate which would have obtained had the age and sex distribution of the population been the same as that of England and Wales at the 1901 Census, the standard usually taken for international comparisons.

† Medically certified deaths only. Rates for subsequent years calculated on the total deaths registered.

‡ Actual (per census).

§ Includes miners' phthisis combined with pulmonary tuberculosis.

‖ Not yet available.

¶ Not available.

age of the community will rise and, concurrently, the death rate from diseases of late and middle life, such as cancer and diseases of heart and circulatory system, will increase.

The birth rate is the highest recorded since 1923, while the crude death rate is the lowest recorded, at least since the establishment of the Department in 1920. The survival rate, or rate of natural increase, is the highest recorded since 1922.

The estimated population of the Union in the four racial groups is shown in Table 2.

TABLE 2.—ESTIMATED POPULATION, 1944, BY RACE.

Province.	European.			Native.			Asiatic.			Coloured.		
	M.	F.	P.	M.	F.	P.	M.	F.	P.	M.	F.	P.
Cape	423,000	422,000	845,000	998,900	1,266,500	2,265,400	7,600	4,700	12,300	396,600	393,000	789,600
Natal	115,000	116,000	231,000	846,500	931,800	1,778,300	106,000	100,400	206,400	11,000	10,800	21,800
Transvaal	524,000	501,000	1,025,000	1,672,200	1,289,700	2,961,900	17,800	12,700	30,500	30,100	29,600	59,700
Orange Free State	100,000	99,000	199,000	301,700	323,200	624,900	—	—	—	9,200	8,500	17,700
UNION	1,162,000	1,138,000	2,300,000	3,819,300	3,811,200	7,630,500	131,400	117,800	249,200	446,900	441,900	888,800

TABLE 3.—COMPARISON OF BIRTH, DEATH AND NATURAL INCREASE RATES AMONG EUROPEANS IN THE UNION WITH OTHER COUNTRIES. AVERAGE RATES FOR THREE-YEARLY PERIODS (BASED ON LATEST AVAILABLE INFORMATION).

Countries.	Birth Rate.	Death Rate.	Natural Increase.
Union of South Africa.	25·9	9·4	16·5
Holland	20·7	9·0	11·7
Canada	22·4	9·8	12·6
Portugal	26·1	15·6	10·5
New Zealand	21·9	9·9	12·0
Italy	23·5	13·7	9·8
Australia	19·7	10·3	9·4
Germany	20·0	12·3	7·7
United States of America	23·4	10·8	12·6
England and Wales	14·9	12·7	2·2
France	14·7	15·7	*

* Decrease.

TABLE 4.—INFANTILE MORTALITY RATES: EUROPEANS IN THE UNION COMPARED WITH OTHER COUNTRIES. AVERAGE RATES FOR THREE-YEARLY PERIODS (BASED ON LATEST AVAILABLE INFORMATION).

New Zealand	30
Holland	41
Australia	39
Union of South Africa	45
England and Wales	54
Canada	57
Germany	64
France	78
Belgium	84
Italy	109
Lithuania	118
Portugal	128

III.—ADMINISTRATIVE.

1. STAFF.

The staff chart (Table 5) included in this section shows the Departmental organisation. It is with deep regret that the sudden death of Mr. C. van Niekerk, the Under-Secretary, must be recorded. His place was taken by Mr. N. A. G. Reeler, the Departmental Chief Clerk, who was promoted to the position of Under-Secretary.

Loss of professional staff has to be reported and mention must once again be made of the extreme difficulty experienced in recruiting suitable medical men to carry out existing services and for purposes of undertaking much needed additional services. The clerical and typing sections are also suffering and have been so denuded by resignations that further loss of personnel can only have the gravest repercussions.

2. DISTRICT SURGEONS.

It is gratifying to record that, despite the many war-time difficulties with which they have had to contend, the district surgeons have rendered admirable service during the year under review. With numbers of whole-time and part-time posts unfilled, and the pronounced difficulty experienced in obtaining incumbents for these vacancies, many of the district surgeons were called upon to assume additional responsibilities and to extend their normal spheres of operation. When it is considered that for almost six years they have worked under great strain and inconvenience, many of them in a temporary capacity, it is to their credit that they responded so readily to the additional burdens that were out of necessity imposed on them. Were it not for their willing co-operation the medical services, during these critical times, would undoubtedly have broken down in many of the rural areas. In many instances it was found necessary to apportion vacant district surgeoncy areas to the neighbouring district surgeons. It is expected that as the war has ended, those medical practitioners who have been on active service will soon be returning to their former posts and bring relief to many of the overworked district surgeons.

District surgeons are from time to time criticised by the public who, it is to be regretted, fail to appreciate the onerous nature of their duties. Any delay in attendance is apt to incur the displeasure of those concerned. Consideration is rarely accorded to them, it being taken for granted that they should be in a position to proceed without delay, regardless of circumstances, to those in need of their services. It is forgotten that their duties are multifarious, that they are frequently the victims of frivolous calls and that attendance on a patient is subject to a magistrate's authority. In the rural districts they have to serve large and widespread areas, in many cases sparsely populated, which involves travelling long distances and many hours absence from their headquarters. They have to contend with transport difficulties, bad and indifferent roads, adverse climatic conditions and with inaccessible areas in many parts of the country. They have to be possessed of stamina and endurence to meet the strain that these factors impose on them.

A step of singular importance taken during the year, one which should meet with the approval of those concerned, was the conversion of all additional district surgeon posts into district surgeon posts. This will entitle them to an allowance for all travelling beyond a radius of three miles, whereas formerly no travelling allowance accrued within a radius of ten miles. Furthermore the previous inclusive salary with no drug allowance is now superseded by a salary and a drug allowance. Consideration was also given to the question of increasing the salaries and drug allowances of part-time district surgeons. In a considerable number of cases these increases, in some cases material ones, were granted, these being based on the records of work submitted. In this connection it is necessary to point out that many district surgeons persist in failing to keep accurate records of their work and submit returns which are either grossly underestimated or overestimated. District surgeons should endeavour to give this matter their earnest attention in the future.

The interest and enthusiasm displayed by district surgeons in the war against venereal diseases has been a noteworthy feature of the past year. This portion of their work, a most important one, continues to expand, and their efforts in the direction of eradication and control

TABLE 5.

CHART OF DEPARTMENT OF PUBLIC HEALTH, AS AT 30TH JUNE, 1945.

Minister of Welfare and Demobilization (HON. H. G. LAWRENCE).

Minister (Chairman)
Secretary and Chief Health Officer (Deputy Chairman)
Director of Veterinary Services
Mrs. J. E. Conradie
Senator W. J. O'Brien and Mr. R. H. Buchanan
Drs. K. Bremer, M.P., A. J. Orenstein, C. P. Theron, and E. H. Cluver
} *Council of Public Health.*

Secretary and Chief Health Officer (Dr. Peter Allan).

2 *Deputy Chief Health Officers*
(Dr. A. J. van der Spuy).
(Dr. B. M. Clark).

Under-Secretary (N. A. G. Reeler).
Departmental Chief Clerk (D. J. M. Marais).

Commissioner for Mental Hygiene
(Dr. W. Russel).

1 Accountant.
3 Assistant Accountants.

4 Chief Clerks, Grade II.

9 Principal Clerks.

22 Senior Clerks.
2,479 Clerks, Typists, Nursing and Domestic staff, etc.

SECTIONS.

Detached Officers.	Inspection and Special Staff.	Maternity and Child Welfare.	Pathological and Biological Control Laboratories.	Port Health Officers.	District Surgeons.	Leprosy.	Venereal Diseases.
Cape Town :— Deputy Chief Health Officer (Dr. H. S. Gear). Senior Assistant Health Officer (Dr. J. J. du Pré le Roux). Durban :— Deputy Chief Health Officer (Dr. F. W. P. Cluver). Assistant Health Officer (Dr. A. L. Ferguson). Johannesburg :— Assistant Health Officer (Vacant). S.A. Railways and Harbours :— Deputy Chief Health Officer (Dr. C. G. Booker)	Assistant Health Officer (Dr. P. C. Eagle). Assistant Health Officer (Venereal Diseases) (Dr. C. A. M. Murray). Medical Inspector (Dr. H. F. Schiller) Dental Health Officer (Dr. T. Ockerse). Nutrition Officer (Dr. J. M. Latsky) Medical Inspector, Cape Native Territories (Dr. R. J. Smit) Medical Officers Native Health Units (Dr. S. L. Kark and E. C. A. Fristedt). Professional Officer (Dietetics) (Miss G. M. Sedgwick). Six Assistant Professional Officers (Dietetics). Ecologist and Chief Rodent Officer (Mr. D. H. S. Davis). Twenty-three Inspectors (Plague and Typhus).	Medical Inspector (Dr. K. D. Winterton). 3 Nurse Lecturers.	Cape Town, and Vaccine Institute, Rosebank (Drs. I. Gordon, and A. H. Shapiro). Cape Town Biological Control Laboratory (Dr. R. Turner). Durban (Vacant). S.A. Institute for Medical Research (Johannesburg, Port Elizabeth and Bloemfontein) East London and Border Pathological Laboratory.	Cape Town (Dr. J. M. Bosman). Durban (Dr. J. McKay). Port Elizabeth (Dr. P. B. van der Lith). East London (Dr. R. V. S. Stevenson). Simonstown (Dr. A. B. Bull). Mossel Bay (Dr. J. A. du P. Krick). Port St. Johns (Vacant). Saldanha Bay (Dr. J. Raueh).	31 Whole-time 3 Whole-time (jointly.) 351 Part-time. 385 Total.	*Leprosy Advisory Committee.* Secretary and Chief Health Officer, Dr. P. Allan (Chairman), Professor W. H. Craib, Drs. A. Pijper, A. J. Orenstein, W. F. Rhodes, E. H. Cluver and K. Bremer, M.P. *Institutions.* Pretoria (Drs. A. R. Davison, H. J. F. Wood and P. A. D. Winter). Emjanyana (F. J. Roach and Dr. P. A. Thronton). Mkambati (J. P. J. Kolver and Dr. F. S. Drewe). Amatikulu (E. G. C. Scotney and Dr. E. L. Riemer) Bochem (J. H. Franz).	*Venereal Diseases Advisory Committee.* Secretary and Chief Health Officer (Dr. P. Allan (Chairman), Dr. H. Gluckman, M.P., and departmental medical officers. *Institutions.* Rietfontein, Johannesburg (Drs. J. H. Loots, J. Meyer and N. Saks). Kingwilliamstown. Bochem (*a*). Elim (*a*). Jane Furse. Memorial (*a*). Several smaller hospitals.

Malaria.	Tuberculosis.	Epidemic and Infectious Diseases (Plague, Typhus, Smallpox, etc.), and Vaccination.	Food and Drugs Adulteration, Habit-forming Drugs.	Local Authorities.	Mental Hospitals.	Other Bodies.
Transvaal :— Senior Malaria Officer (Dr. S. Annecke), Inspectors and Assistants. Natal :— Medical Inspectors (Vacant). Inspectors.	*Institutions.* Nelspoort Sanatorium (Drs. H. R. Aekermann, P. Scher, C. A. Sleggs and I. Harrison.) Rietfontein Hospital. King George V Hospital (Drs. B. A. Dormer, F. J. Wilcs and I. Woods). In addition to these Institutions under the direct control of the Department there is a number of other hospitals where accommodation is available.	Field Staff. District Surgeons. Local Authorities. Magistrates, etc.	Inspectors, Customs, Police, etc. Chemical work done in chemical laboratories of Department of Agriculture at Cape Town and Johannesburg. Pharmacist.	252 City and Town Councils. 92 Village Management Boards. 22 Local Boards. 30 Village Councils. 67 Health Committees. 23 Town Boards. 95 Divisional Councils. 1 Health Board. 154 Magistrates. 5 Mining Commissioners. 1 Rural Local Authority. 1 Local Health Commission. 743 Total.	19 Physician Superintendents. 1. Psychologist. 6 Chemists and Druggists. *Institutions.* Alexandria : Feebleminded. Bloemfontein : Mental. Fort Beaufort : Mental Fort Napier : Feebleminded. Grahamstown : Mental. Pietermaritzburg (Town Hill) : Mental. Port Alfred : Mental. Pretoria : Mental. Queenstown : Mental. Valkenberg : Mental. Witrand: Feebleminded Krugersdorp : mental.	National Housing and Planning Commission : A. K. McConnel (Secretary.) *Members.* Major W. Brinton (Chairman). Major J. C. Collings (Director of Housing and Deputy Chairman) Major E. L. Ellenberger. Major. N. L. Hanson. Capt. H. S. Kemp. Mr. M. G. Nicolson. Mr. G. O. Owen. Mr. H. C. Roberts. Mr. A. Schauder. Mrs. L. A. B. Reitz. South African Medical Council. South African Pharmacy Board. Rand Water Board. National Nutrition Council.

*Receives grant-in-aid.

have been most praiseworthy. There is ample evidence to prove that their treatment centres at strategic points in the rural areas have been well attended and have proved a boon to the sufferers as well as to their employers. District surgeons can rest assured that the Department will continue to support them in every conceivable way in their campaigns against these diseases.

Table 6 summarises the present distribution of district surgeons. It will be observed that the number of part-time district surgeons has increased by three and that a further appointment of a joint whole-time district surgeon and medical officer of health has been made. The necessity for more whole-time district surgeons is receiving the attention of the Department, and it is anticipated that with the return to more normal times the number will be materially increased during the coming year.

TABLE 6.—DISTRICT SURGEONCIES AS AT 30TH JUNE, 1945.

Province.	Whole-time.	Part-time.			
		Whole-time, but Jointly with Local Authority or Public Body.	On Inclusive Annual Salary.	On Annual Salary with certain Supplementary Fees and Allowances.	Total.
Cape	8	3	—	167	178
Natal	3	—	—	45	48
Transvaal	18	—	1	77	96
Orange Free State	2	—	—	61	63
UNION	31	3	1	350	385

The thirty-one whole-time posts are those at Cape Town (2); Durban (3); East London; Port Elizabeth; Pretoria (5) (one at Bronkhorstspruit); Johannesburg (4); Pietersburg (2); Bloemfontein (2); Wynberg; Knysna; Heidelberg (Tvl.); Nigel; Nylstroom (2); Rustenburg (2); Delagersdrift (District Middelburg, Tvl.); Saldanha Bay; and Kimberley.

minimum. In fact it has usually only been possible to carry out such inspections when special circumstances have made it particularly necessary. Essential work of this nature has, however, been maintained wherever it was specially called for in spite of the difficulties created by war conditions.

The year under review has happily seen the end of the war and it is hoped that with the return to normal conditions, considerable expansion will be possible in the inspection and other field activities of the Department, both in connection with infectious diseases and inspections of local authority areas. These systematic inspections of local authority areas, which were a prominent feature of the Department's work prior to the war, are of the greatest value in improving conditions, particularly in the small towns and villages, and in maintaining a high standard of hygiene and general sanitation in its broadest sense. This is of great importance particularly in the prevention and control of diseases of intestinal origin, such as typhoid and enteritis.

2. PUBLICATIONS.

DR. F. W. P. CLUVER, Deputy Chief Health Officer, Durban:

"Dentistry in its Relation to Public Health", published in the *South African Dental Journals*, April and May, 1945.

DR. H. S. GEAR, Deputy Chief Health Officer, Cape Town:

"Hygiene, the Medical Officer and the Middle East Campaign", published in the *South African Medical Journal*, Volume XIX, 9th June, 1945.

DR. R. TURNER, Specialist Serologist, Cape Town:

"Some Epidemiological and Public Health Aspects of Poliomyelitis", published in the *South African Medical Journal*, Volume XIX, No. 1, 13th January, 1945.

"Legislation: Proprietary Medicines", published in the *South African Medical Journal*, Volume XIX, No. 12, 23rd June, 1945.

DR. B. A. DORMER, Medical Superintendent, King George V Jubilee Hospital for Tuberculosis, Durban:

"Superior Sulcus Tumour (Pancoast)" (with Drs. Friedlander and F. J. Wiles), published in the *Lancet*, 2nd September, 1944.

3. TABLE 7.—LOCAL AUTHORITIES UNDER PUBLIC HEALTH ACT (1919) AS AT 30TH JUNE, 1945.

Province.	City and Town Council.	Village Management Boards.	Local Boards.	Village Councils.	Health Committees.	Town Boards.	Magistrates.	Divisional Councils.	Board of Health.	Mining Commissioners.	Rural Local Authority.	Local Health Commission (Natal) and Peri-Urban Areas Health Board (Transvaal.	Committee of Management.	Total.
Cape	140	86	22	—	—	—	29	95	1	1	1*	—	—	375
Natal	11	—	—	—	29	26	46	—	—	—	—	1	—	113
Orange Free State	64	5	—	—	—	—	36	—	—	1	—	—	1	107
Transvaal	39	—	—	30	35	—	35	—	—	2	—	1	—	142
TOTAL	254	91	22	30	64	26	146	95	1	4	1	2	1	737

* Vaal-Hartz Rural Local Authority with area of jurisdiction extending into the Transvaal.

IV.—WORK OF THE DEPARTMENT.

1. INSPECTIONS, INVESTIGATIONS AND FIELD WORK.

As in previous war years this aspect of the Department's work, along with many other aspects, has been seriously hampered by lack of personnel. In spite of this, professional and technical officers of the Department have always been readily available to give advice to local authorities regarding the prevention and suppression of infectious diseases. This is regarded as one of the fundamental duties of the Department and the service has been maintained throughout the war in spite of the many difficulties encountered owing to shortage of staff. Less urgent activities which are, however, in some respects equally important such as systematic inspection of local authority areas, have under war conditions had to be reduced to a

"Bronchography in Pulmonary Tuberculosis" (with Drs. Friedlander and F. J. Wiles), published in *American Review of Tuberculosis*.

I. "Normal or Questionable Roentgenographic Findings in Lungs and Positive Sputum". (October, 1944.)

II. "Radiographic Blackout". (October, 1944.)

III. "Chronic Fibroid Phthisis". (January, 1945.)

IV. "A Geographical Adventure". (May, 1945.)

"Non-Traumatic Pulmonary Sepsis", published in the *Clinical Proceedings*. (May, 1945.)

DR. T. OCKERSE, Dental Health Officer, Pretoria:

"Dental Caries in a High and Low Incidence Area in South Africa" (with Miss M. Malherbe),

published in the *South African Journal of Medical Sciences*, 9, 75. (August, 1944.)

"The Relationship of Fluorine Content Hardness and P H Values of Drinking Water and the Incidence of Dental Caries", published in the *South African Medical Journal*, 18, 255. (August, 1944.)

Monograph on "Fluorine and Dental Caries in South Africa", published by the American Association for the Advancement of Science.

Dr. J. Friedlander, Medical Officer, King George V Jubilee Hospital for Tuberculosis, Durban:

"Superior Sulcus Tumour (Pancoast)" (with Drs. B. A. Dormer and F. J. Wiles), published in the *Lancet*, 2nd September, 1944.

"Bronchography in Pulmonary Tuberculosis" (with Drs. B. A. Dormer and F. J. Wiles), published in *American Review of Tuberculosis.*

I. "Normal or Questionable Roentgenographic Findings in Lungs and Positive Sputum" (October, 1944.)

II. "Radiographic Blackout". (October, 1944.)

III. "Chronic Fibroid Phthisis". (January, 1945.)

IV. "A Geographical Adventure". (May, 1945.)

Dr. F. J. Wiles, Medical Officer, King George V Jubilee Hospital for Tuberculosis, Durban:—

"Superior Sulsus Tumour (Pancoast)" (with Drs. B. A. Dormer and J. Friedlander), published in the *Lancet*, 2nd September, 1944.

"Bronchography in Pulmonary Tuberculosis" (with Drs. B. A. Dormer and J. Friedlander), published in *American Review of Tuberculosis.*

I. "Normal or Questionable Roentgenographic Findings in Lungs and Positive Sputum". (October, 1944.)

II. "Radiographic Blackout". (October, 1944.)

III. "Chronic Fibroid Phthisis. (January, 1945.)

IV. "A Geographical Adventure". (May, 1945.)

Dr. J. Meyer, Medical Officer, Rietfontein Hospital, Johannesburg:

"Major Complications of Arsenical Therapy" (with Dr. J. Daneel), published in the *South African Medical Journal*, 22nd July, 1944.

Dr. I. Gordon, Assistant Pathologist, Cape Town:

"A Classification of Deaths of Medico-legal Importance", published in the *British Medical Journal*, Volume 2, 9th September, 1944.

"Fatal Air Embolism in Criminal Abortion", published in *Clinical Proceedings*, volume 4, May, 1945.

Dr. S. L. Kark, Medical Officer-in-Charge, Native Health Unit, Polela:

"The Health and Nutrition of South African Bantu School-children" (with Dr. H. le Riche), published in *Manpower*, September, 1944.

Dr. J. Daneel, Medical Superintendent, Rietfontein Hospital, Johannesburg:

"Major Complications of Arsenical Therapy" (with Dr. J. Meyer), published in the *South African Medical Journal*, 22nd July, 1944.

"Temperature Charts", published in *Clinical Proceedings*, Volume III, No. 7, September, 1944.

Miss Malherbe, Dietitian, Pretoria:

"Dental Caries in a High and Low Incidence Area in South Africa" (with Dr. T. Ockerse), published in the *South African Journal of Medical Sciences*, 9, 75, August, 1944.

Miss P. G. Best, Dietitian, Pretoria:

"The Nutritional Value of Indian Diets", published in *Manpower*, March, 1945.

Dr. W. H. le Riche, Medical Officer-in-Charge, Knysna Health Centre, Knysna:

"The Health and Nutrition of South African Bantu School-children" (with Dr. S. L. Kark), published in *Manpower*, September, 1944.

3. Health Education and Propaganda.

In successive annual reports, attention has been drawn to the fact that the important function of health propaganda has been delegated by this Department to the South African Red Cross Society, and that that body receives an annual subsidy of £5,000 a year from this Department for carrying out this work. The material is produced by the National Health Education Committee of the South African Red Cross Society and is submitted to the Department for approval before it is released to the public, so that all the material bears the hallmark of approval by this Department as well as that of the Red Cross Society. The distribution of this material to the public is a function of the various provincial branches of the Red Cross Society.

Over the period of several years during which the Red Cross Society has been carrying out this work a greatly increased demand for health propaganda material has gradually been created throughout the country. The demand has increased particularly during the last year or two. This is an indication of the fact that the material is appreciated by the public and of a growing realisation of the importance of health propaganda work. The propaganda material consists of films, filmlets or "shorts", posters, pamphlets, leaflets and charts with explanatory notes for use in schools.

The need for active health propaganda is obvious and the Department is most anxious to encourage this work in every possible way. Apart from the propaganda material produced by the Red Cross Soceity, the Department has its own pamphlets dealing with a number of subjects of importance from a health educational point of view. There are also a number of health educational films belonging to the Department which are kept by the Union Education Department's Film Library and are available for use by local authorities. Lack of space in this report prevents the publication of detailed lists of the material available, but such information will readily be given on request. Such requests should be made to the Red Cross Society in the case of material produced by that body or to the Department itself in the case of Departmental material, while the films referred to may be obtained on loan by local authorities on application to the Film Bureau of the Union Education Department.

4. Laboratories.

The work done at the Department's laboratories at Cape Town and Durban, at the South African Institute for Medical Research and its bracnhes and at the East London laboratory is shown in Table 8. The work of the Department's laboratories at both Cape Town and Durban has been greatly hampered by the serious shortage of trained technical staff and, at both these laboratories, it has at times been found absolutely essential to curtail work on this account.

Owing to the prevalence of smallpox throughout large areas of the country the Government Vaccine Institute at Rosebank, Cape Town, has undergone a year of very severe strain. The institute manufactures all the calf-lymph used for smallpox vaccination throughout the Union as well as relatively small quantities which are sent to neighbouring territories.

In normal years, prior to and including 1937, the total number of doses issued during the year varied from one to two million. In 1938 the amount jumped up to 4½ million and for the years, 1939, 1940, 1941, 1942, the figures remained above 2 million but under 3 million. In 1943 the figure had reached 3½ millions; in 1944, nearly 5½ million and now the stupendous figure of just over 11½ million has been reached. This is more than sufficient to vaccinate everyone in the country. A very large portion of the issues has gone to the Transvaal, very nearly 5 million, and in the single month of November that Province received over a million and in June, 1,700,000 doses. A small amount of this lymph goes to the Free State and northern Cape Province. More lymph was issued in June, the last month of the year under review, than in any other month, the figure being practically 2 million doses.

The number of people who have been vaccinated during this period is undoubtedly very great. Mass vaccination of the population on a very large scale has been carried out in many parts of the country. On the other hand there is no doubt that there has also been a considerable wastage of lymph. This is due partly to over-ordering of bulk amounts and partly to extravagance at the time of

use. While the Department is most anxious that local authorities and district surgeons should have adequate supplies of lymph, great care should be taken to see that there is no wastage.

The number of doses of lymph issued in respect of each of the various provinces during the year was as follows :—

Cape Province	3,144,084
Transvaal	4,893,970
Natal	2,520,383
Orange Free State	186,587

steps were taken to prevent the introduction of infectious disease into the country and a large number of cases were dealt with at the various ports. The great majority of the cases were of the commoner infectious diseases and the only cases of formidable epidemic disease which were encountered were two cases of smallpox and two cases of typhus. These cases were all found at Durban and no spread of infection occurred after the usual measures had been taken.

Owing to the widespread occurrence of smallpox in various parts of the country and particularly in Natal,

TABLE 8 —PATHOLOGICAL LABORATORIES: ANALYSES AND EXAMINATIONS, YEAR ENDED 30TH JUNE, 1945.

Particulars.	Government Laboratories.		South African Institute for Medical Research.			East London Hospital Board.
	Cape Town.	Durban.	Johannesburg.	Port Elizabeth Branch.	Bloemfontein Branch.	East London and Border Pathological Laboratory.
Specimens examined for—						
(a) Government Departments :—						
Agriculture and Forestry	—	3	—	(a)	(a)	—
Customs and Excise	2	—	—	—	—	—
Defence	684	—	4,771	6,562	4,637	486
Education	476	—	—	—	—	—
Finance	28	—	—	—	—	—
Interior	—	1,005	1,605	866	728	—
Justice (including Prisons)	1,549	1,008	3,694	375	201	9
Mines (including Miners' Phthisis)	2	—	19,636	—	—	—
Native Affairs	—	—	—	—	—	—
Post and Telegraphs	—	—	—	—	—	—
Public Health (including Leper Institutions and Mental Hospitals)	17,326	9,168	93,109	9,887	6,455	20,688
Public Works	—	—	(a)	(a)	(a)	—
S.A. Railways and Harbours	131	1,739	(a)	(a)	(a)	—
Others	—	—	286	151	29	15
(b) General Hospitals (Provincial)	2,987	18,924	91,594	15,300	6,222	—
(c) Local Authorities	48,832	15,762	66,096	35,894	654	—
(d) Medical Practitioners and membres of the public.	15,213	23,075	26,470	2,579	—	—
(e) Other Governments or Administrations	137	42	576	—	—	—
(f) Others	2,582	1,436	34,869	—	—	—
TOTALS	89,949	72,162	342,706	71,614	18,926	21,198
Manufactures and Issues—						
Autogenous Vaccines	200 (c)	1	1,191 (c)	131 (c)	42	—
Bacterial Vaccines c.c.	—	—	4,470,019	(b)	(b)	—
Tuberculin Dilutions c.c.	—	—	5,664	50	—	—
Sera (various), Bacterial Filtrates c.c.	—	—	1,068,876	(b)	(b)	—
Anti-rabic Vaccine c.c.	17,900	—	—	—	—	—
Chaulmoogra Oil Preparations	355,450	—	—	—	—	—
Smallpox Vaccine (prepared at Vaccine Institute, Rosebank)—						
Calf Lymph (issued) Tubes	11,564,013 (d)	—	1,564,104	745	11,000	—
Chick Membrane Lymph (on hand) Tubes	400,000	—	—	—	—	—
Others (oral) Doses	5,000 (c)	—	32,448	—	—	—
Milk Cultures Bottles	—	—	398	(b)	(b)	—
Attendance at Courts of Law by Members of Staff	250	12	—	—	—	—
Total days absences, entailed by such attendances	75	12	—	—	—	—

(a) Included under "others".
(b) Included in Johannesburg figures.
(c) c.c.
(d) Manufactured 11,132,000 tubes.

5. TABLE 9.—LICENCES ISSUED UNDER THE THERAPEUTIC SUBSTANCES REGULATIONS (GOVERNMENT NOTICE NO. 1131 OF 1935).

Therapeutic Substances.	Manufacturing Licences.			Import Licences.			Research Licences.			Vitamin Permits.		
	Issued 1944–45.	Cancelled 1944–45.	In Force 30/6/45.	Issued 1944–45.	Cancelled 1944–45.	In Force 30/6/45.	Issued 1944–45.	Cancelled 1944–45.	In Force 30/6/45.	Issued 1944–45.	Cancelled 1944–45.	In Force 30/6/45.
Antitoxic and Bacterial Sera	1	1	3	—	—	13	—	—	9	—	—	—
Antigens and Bacterial Vaccines	1	1	14	—	—	14	—	—	9	—	—	—
Arsphenamines and Arsphenamine Derivatives	—	—	—	1	1	9	—	—	11	—	—	—
Insulin	—	—	—	—	—	12	—	—	11	—	—	—
Pituitary (Post. Lobe) Extract	—	—	—	—	—	14	—	—	11	—	—	—
Sterilised Surgical Ligatures and Sutures	—	—	—	1	1	9	—	—	11	—	—	—
Sex Hormones and Sex Hormone Preparations	1	—	1	1	1	21	—	—	—	—	—	—
Vitamins and Vitamin-containing Preparations	1	—	2	1	—	7	—	—	—	—	1	18
Antivenomous Sera	—	—	—	—	—	1	—	—	—	—	—	—

6. PORT HEALTH ADMINISTRATION.

During the year under review the war in Europe came to an end. With the cessation of hostilities and a return to peace-time conditions it is anticipated that the amount and nature of the shipping at our ports will speedily return to normal, although the amount of shipping may be in excess to what it was prior to the war. Under war conditions the staffs of the Port Health services have been very severely taxed owing to the abnormal amount of shipping which has passed through our harbours. The health services have, however, always been carried out efficiently and satisfactorily, sometimes under the most abnormal and difficult conditions.

During the year under review the amount of shipping which had to be dealt with was less than in earlier war years, owing to the changed war conditions. The usual

the crews and passengers of all ships arriving at Durban were required to produce evidence of recent vaccination during the time when the disease was most prevalent. For the same reason vaccination was also carried out at Cape Town and the crews of all ships proceeding to Durban were vaccinated to facilitate clearance at the latter port. All the passengers and crews of ships arriving from Durban who did not show evidence of recent vaccination were vaccinated before being allowed ashore.

As usual careful attention was given to the carrying out, in accordance with the International Sanitary Convention, of plague control measures at the various ports.

The usual steps were taken to prevent the introduction of infectious disease into the country by aircraft arriving at the various airports.

Table 10.—Notification of Diseases and numbers of Deaths during the Year ended 30th June, 1945.

Province	Amoebic Dysentery.*		Anthrax.		Diphtheria.		Encephalitis, Infective.		Enteric or Typhoid Fever.		Erysipelas.		Leprosy.		Malta Fever.		Meningitis, Cerebro-Spinal.		Ophthalmia, Gonorrheal.		Ophthalmia, Neonatorum.		Plague.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
I.—EUROPEAN.																								
Cape (ex. Transkei)	—	—	4	—	561	32	10	2	201	14	67	—	—	—	—	—	186	20	1	—	30	—	—	—
Transkei	—	—	—	—	14	1	—	1	5	—	4	—	—	—	—	—	1	—	—	—	—	—	—	—
Natal	589	2	—	—	403	17	6	1	96	9	31	—	—	—	—	—	22	2	—	—	5	—	—	—
Transvaal	—	—	—	—	696	52	14	19	291	19	106	—	2	4	3	—	55	19	2	—	57	—	—	—
Orange Free State	—	—	1	—	86	5	1	—	77	5	12	—	—	—	—	—	3	—	1	—	1	—	—	—
Total	589	2	5	—	1,760	107	31	23	670	47	220	—	2	4	3	—	267	41	4	—	93	—	—	—
II.—NATIVE.																								
Cape (ex. Transkei)	—	—	4	1	91	10	2	2	374	51	17	—	18	—	—	—	201	23	20	—	61	—	1	1
Transkei	—	—	—	—	6	—	—	—	46	3	1	—	12	—	—	—	4	1	4	—	5	—	35	22
Natal	1,237	162	8	—	281	39	3	—	639	151	4	—	80	2	—	—	48	4	19	—	96	—	—	—
Transvaal	—	—	12	1	351	43	10	11	724	178	67	1	105	29	1	—	281	54	18	—	147	—	—	—
Orange Free State	—	—	8	—	62	7	—	—	282	26	3	1	25	—	—	—	9	7	—	—	13	—	2	1
Total	1,237	162	32	2	791	99	15	13	2,065	409	92	2	240	31	1	—	543	89	61	—	322	—	38	24
III.—ASIATIC.																								
Cape (ex. Transkei)	—	—	—	—	4	—	—	1	4	—	1	—	1	—	—	—	4	—	1	—	1	—	—	—
Transkei	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Natal	48	5	—	—	79	1	1	3	190	16	1	—	2	—	—	—	14	6	1	—	26	—	—	—
Transvaal	—	—	—	—	34	7	—	2	12	2	—	—	—	—	—	—	1	—	1	—	2	—	—	—
Orange Free State	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	48	5	—	—	117	8	1	6	206	18	2	—	3	—	—	—	19	6	3	—	29	—	—	—
IV.—COLOURED.																								
Cape (ex. Transkei)	—	—	4	—	301	27	11	2	486	56	48	—	3	—	—	—	587	74	23	—	209	—	1	—
Transkei	—	—	—	—	3	1	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Natal	63	—	—	—	47	—	1	—	24	4	1	—	—	—	—	—	4	—	—	—	3	—	—	—
Transvaal	—	—	1	—	25	3	1	2	12	2	6	—	5	8	—	—	5	5	—	—	7	—	—	—
Orange Free State	—	—	—	—	2	—	—	—	2	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—
Total	63	—	5	—	378	31	13	4	529	62	56	—	9	8	—	—	596	79	23	—	219	—	1	—
V.—TOTAL (ALL RACES).																								
Cape (ex. Transkei)	—	—	12	1	957	69	23	7	1,065	121	133	—	22	—	—	—	978	117	45	—	301	—	2	1
Transkei	—	—	—	—	23	2	—	1	56	3	5	—	12	—	—	—	5	1	4	—	5	—	35	22
Natal	1,937	169	8	—	810	57	11	4	949	180	37	—	82	2	—	—	88	12	20	—	130	—	—	—
Transvaal	—	—	13	1	1,106	105	25	34	1,039	201	179	1	112	41	4	—	342	78	21	—	213	—	—	—
Orange Free State	—	—	9	—	150	12	1	—	361	31	16	1	26	—	—	—	12	7	1	—	14	—	2	1
Total	1,937	169	42	2	3,046	245	60	46	3,470	536	370	2	254	43‡	4	—	1,425	215	91	—	663	—	39	24

Province	Poliomyelitis, Acute.		Puerperal Fever, including Puerperal Sepsis.		Rabies.		Relapsing Fever.		Scarlatina or Scarlet Fever.		Smallpox.		Trachoma.		Tuberculosis of the Bone.†		Tuberculosis of the Glands.		Tubercular Meningitis.†		Tubercular Peritonitis.		Tuberculosis, Pulmonary.		Typhus Fever.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
I.—EUROPEAN.																												
Cape (ex. Transkei)	180	11	32	—	—	—	—	—	675	1	7	—	1	—	27	14	4	—	13	38	4	4	475	204	69	6	2,547	346
Transkei	3	—	—	—	—	—	—	—	16	—	1	—	—	—	—	—	—	—	—	—	—	—	3	—	16	—	63	2
Natal	126	15	4	—	—	—	1	—	307	—	27	14	—	—	10	—	5	—	1	—	—	1	205	66	17	1	1,855	128
Transvaal	420	37	62	2	—	—	2	—	2,328	3	11	—	3	—	23	9	2	1	7	13	3	1	234	100	9	1	4,330	280
Orange Free State	79	2	2	1	—	—	—	—	125	—	3	1	—	—	—	1	—	—	—	1	—	—	20	5	2	—	413	21
Total	808	65	100	3	—	—	3	—	3,451	4	49	15	4	—	60	24	11	1	21	52	7	6	937	375	113	8	9,208	777
II.—NATIVE.																												
Cape (ex. Transkei)	108	6	52	6	—	—	14	—	13	—	132	1	12	—	86	47	36	5	29	55	21	15	3,016	1,021	1,053	110	5,361	1,355
Transkei	4	—	20	—	—	—	—	—	4	—	338	5	—	—	100	—	78	—	1	—	4	—	2,276	13	1,282	410	4,220	454
Natal	133	10	73	7	—	—	2	—	10	—	1,860	199	10	—	245	23	167	1	35	7	51	7	2,708	1,161	159	10	7,868	1,783
Transvaal	108	6	136	11	—	—	343	—	19	—	488	12	13	—	220	219	119	15	43	46	57	55	3,000	1,152	181	19	6,443	1,862
Orange Free State	69	3	14	3	1	1	—	—	7	—	124	2	—	—	13	12	6	—	1	1	2	—	267	113	52	7	060	184
Total	422	25	295	27	1	1	359	—	53	—	2,942	219	35	—	664	301	406	21	109	109	135	78	11,267	3,470	2,727	556	24,852	5,638
III.—ASIATIC.																												
Cape (ex. Transkei)	4	1	1	—	—	—	—	—	4	—	—	—	—	—	—	1	—	—	1	3	—	1	43	21	1	—	70	28
Transkei	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	1	2	—	4	1
Natal	30	8	20	—	—	—	—	—	1	—	293	65	3	—	32	2	17	—	8	5	16	3	633	312	4	—	1,419	425
Transvaal	10	1	7	—	—	—	—	—	5	—	1	—	—	—	—	1	—	—	3	3	3	3	29	26	—	—	108	45
Orange Free State	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Total	44	10	29	—	—	—	—	—	10	—	295	65	3	—	32	4	17	—	12	11	19	7	706	360	7	—	1,602	500
IV.—COLOURED.																												
Cape (ex. Transkei)	95	4	76	7	—	—	14	—	30	1	6	—	11	—	138	71	44	11	99	200	25	23	3,037	1,682	48	—	5,295	2,158
Transkei	—	—	—	—	—	—	—	—	2	—	—	—	—	—	2	—	—	—	—	—	—	—	18	3	2	2	32	6
Natal	5	—	—	—	—	—	1	—	7	—	23	6	2	—	4	2	2	—	6	3	2	—	138	50	—	—	333	65
Transvaal	4	—	8	—	—	—	2	—	8	—	2	—	—	—	6	13	4	—	2	5	—	1	158	116	—	—	256	155
Orange Free State	2	—	1	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	11	5	12	—	36	5
Total	106	4	85	7	—	—	17	—	51	1	31	6	13	—	150	86	50	11	107	208	27	24	3,362	1,856	62	2	5,953	2,389
V.—TOTAL (ALL RACES).																												
Cape (ex. Transkei)	387	22	161	13	—	—	28	—	722	2	145	1	24	—	251	133	84	16	142	296	50	44	6,571	2,028	1,171	116	13,274	3,887
Transkei	7	—	20	—	—	—	—	—	22	—	340	5	—	—	102	—	78	—	1	—	4	—	2,298	17	1,302	412	4,319	463
Natal	294	33	07	7	—	—	4	—	325	—	2,203	284	15	—	291	27	191	1	50	15	69	11	3,584	1,589	180	11	11,475	2,402
Transvaal	542	44	213	13	—	—	347	—	2,360	3	502	12	16	—	249	242	125	16	55	67	63	60	3,421	1,404	190	20	11,137	2,342
Orange Free State	150	5	18	4	1	1	—	—	136	—	127	3	—	—	13	13	6	—	1	2	2	—	298	123	66	7	1,410	210
Total	1,380	104	509	37	1	1	379	—	3,565	5	3,317	305	55	—	906	415	484	33	249	380	188	115	16,272	6,061	2,909	566	41,615	9,304

* As from 1st January, 1945, from which date amoebic dysentery became notifiable in the Province of Natal only.
† The fact that in some instances more deaths have been notified than cases is to be explained by the incompleteness of returns rendered to the Department.
‡ *Plus* 220 deaths at Departmental Leper Institutions.
Note.—No cases of Asiatic Cholera, Glanders, Lead Poisoning, Sleeping Sickness or Yellow Fever were reported during the year.

V.—INFECTIOUS AND OTHER DISEASES.

1. Notifications.

The table of notifications has been amplified this year in three important respects. Firstly the racial group previously referred to as "Non-European" has been subdivided into its three component parts, viz., Natives, Asiatics and Coloured. The totals for all races are also shown. Secondly, deaths are shown for each disease and for each racial group. It must, however, be pointed out that the recording of deaths is very incomplete owing to the fact that registration of deaths of Natives is not compulsory in the rural areas, where most of the Natives live. This fact must be borne in mind in studying the figures, which are only as accurate as the available information will permit. Thirdly, instead of recording all types of tuberculosis under one heading, the different types of the disease have been divided into five groups. The additional information recorded has greatly increased the size of the table and it has, therefore, been found necessary to rearrange the form in which it is presented.

The total number of cases notified is a little higher than last year. This is largely accounted for by the increased prevalence of smallpox and also the somewhat larger number of cases of scarlet fever. It must be remembered that many cases of notifiable disease, particularly among Natives, are never seen by a doctor and are therefore never notified.

2. Amoebiasis.

This condition became notifiable in Natal as from 1st January, 1945. The disease is apparently widespread throughout that Province as cases were notified from 35 out of the 45 magisterial districts. The highest incidence is, however, in the coastal districts. In all, 1,937 cases were notified from the whole province. The great majority of the cases, however, came from Durban itself where 1,376, or approximately 70 per cent. of the total number of cases, occurred. Owing to the serious shortage of laboratory staff it has not been possible to make much further progress with the investigations referred to in last year's annual report. A supply of the drug diodoquin has, however, been imported from America and investigations regarding its efficacy in clearing up the carrier state are being carried out. In view of the great importance of the carrier in the spread of amoebic dysentry it is essential that a simpler and more efficaceous method of treating this condition should be evolved. The results of these investigations will, therefore, be awaited with great interest.

3. Bilharziasis or Schistomiasis.

The Transvaal Bilharzia Committee experienced another year of almost complete inactivity on account of its inability to fill the vacant post of medical officer for the mobile unit, and its work was limited to such treatment as could be given by the school medical inspectors during the vacation. As the result of the investigations indicated in the last report a treatment camp was held at Nylstroom and 80 local school children were successfully treated. Follow-up work was done at Derdepoort, where 31 patients had previously been treated. Of these one case showed recurrence of ova and blood in the urine and can rightly be regarded as a probable reinfection since the child admitted exposure to infection and more than four months had elapsed since treatment had ceased.

In order to provide treatment for the children at White River Location School and Bushbuckridge Mission School arrangements were made with local medical practitioners to render this service on the lines adopted by the Transvaal Bilharzia Committee. A follow-up of this treatment will be carried out in due course.

The Committee continues to contribute towards the cost of providing swimming baths at schools in bilharzial areas where such are considered necessary. From the investigations made to date, it is clear that the major bilharzia problem lies in the non-European population of the low veld and that education and propaganda will have to be greatly stepped up to make this section of the population bilharzia conscious.

Foci of infection are from time to time discovered in the Transkei and these are dealt with by the departmental staff stationed in that area.

It is a matter for regret that it has not yet been possible to secure the establishment of an organisation in Natal corresponding to the Bilharzia Committee in the Transvaal although the Provincial Administration now appears to have conceded the need for more intensive treatment than can be afforded by district surgeons.

4. Cancer.

In successive annual reports attention has been drawn to the high and steadily increasing death rate from cancer. The importance of the matter is reflected in Table 1, which shows that cancer is one of the greatest causes of death among Europeans. The position as regards Natives is not accurately known owing to the absence of vital statistics. Cancer among them is, however, not uncommon. In Natives the disease tends to occur most frequently in different parts of the body from those in which it occurs in Europeans. Thus, although primary cancer of the liver is very uncommon among Europeans it is relatively common in Natives.

The reason for the increasing death rate from this disease among Europeans is difficult to determine and it is possible that there are several causes. It seems probable that the increasing average age of the population is one important factor as a greater proportion of the population reaches the cancer age than was formerly the case. The increasing average age of the population is partly due to better public health services, which result in fewer people dying in early life, and partly due to other complex sociological factors. It is also probable that the improved facilities for medical investigation and more accurate diagnosis have resulted in a greater percentage of cancer cases being discovered and recorded. This would also have the effect of increasing the death rate recorded from this disease.

It is a matter of national importance to determine whether the disease is actually becoming more common, and if so, what factors are responsible for the increased incidence. Clinical research is required with a view to elucidating these important problems. It is also of importance that the differences in the anatomical incidence of cancer in Europeans and in Natives should be studied in order to ascertain whether the underlying cause is an hereditary one, or whether it is due to nutritional or other environmental factors. The elucidation of problems such as this may be of great importance in discovering the causes of cancer. It is reasonable to assume that once the aetiology of the disease is fully established it may be possible to apply preventive measures.

In previous annual reports the work and objects of the National Cancer Association have been described. The principal aim of the Association is the formation of a cancer institute. It is intended that this institute will form a focus for the collection of information which may have a bearing on the causation of the disease and for other clinical research. It will also form a centre for the treatment of all forms of cancer by teams of experts with the most up-to-date methods and equipment. The establishment of an institute of the nature described has been approved in principle but under war conditions it has not been possible to make any material progress with the project. With the return to peace it is hoped that it will be possible to make a start with the establishment of the institute.

5. Diphtheria.

Throughout the last ten years there has been an average of approximately eight cases of diphtheria notified every day in South Africa. The significance of this very unsatisfactory position is only fully appreciated when it is realised that the disease is preventable. Diphtheria is one of the most lethal diseases of children, and, as a result of war conditions, it is reported to have turned out to be the leading epidemic disease on the European continent both as a cause of morbidity and of mortality. With the exception of the current year, the incidence in South Africa had been increasing year by year, notwithstanding the fact that the country has been comparatively unaffected by the ravages of war.

Yet childlife can be made immune to its attack, and the dolorous toll of sickness and death can be obviated by the simple procedure of immunization. This potent weapon, the fruit of many years of patient research by medical scientists, is being neglected in South Africa to a surprising degree by parents and many local authorities. There is nothing new-fangled about immunization against diphtheria. It is a well established and proven method of protection which has been used in every civilized country for many years.

With so much to be achieved for so many children, with so little effort, it is difficult to understand the apathetic attitude, in this respect, of parents and many local authorities to the welfare of the children under their care.

While comparisons are sometimes odious, and, as far as public health is concerned, dependent on the efficiency of notifications, it is nevertheless interesting to contrast the diphtheria incidence per 100,000 for the period 1937–1940, of the European population of this country with some other civilized countries where large scale immunization is practised.

Sweden	3·5
Norway	7·0
Netherlands	15·0
Switzerland	17·0
Denmark	28·0
South Africa	100·0

It is also of interest to note that in New York, with more than 7,000,000 people, as few as 7 deaths from diphtheria occurred during the year 1944 ; while in ten New York districts no deaths from diphtheria occurred for periods of 5 to 9 years. This is a remarkable record demonstrating the value of large scale diphtheria immunization. There is no reason why South Africa should not emulate that example.

As has been pointed out previously, the highest incidence of cases, in South Africa, occurs between the ages of 1 to 5 years, and the greatest number of deaths occurs in the 0 to 4 years age group. By the age of five years nearly half the total number of cases have occurred and most of the deaths. It clearly follows, therfore, that immunization should be carried out long before the school-going age. At that age the chief danger period has already passed and, therefore, the value of immunization has been largely lost. Experience has shown that the best age for immunization is from the 6th month to the 1st year of life. Contrary to what is sometimes thought, the younger the child the less the reaction to immunization. In fact, in infants there is practically no reaction. This fortunately reinforces the advice to have the child immunized between the ages of 6 months and 1 year.

Immunization may be carried out by giving two small injections, the first of 0·2 c.cs. of Alum Precipitated Toxoid, and the second of 0·5 c.cs. after an interval of one month to six weeks. Ramon's anatoxine is also frequently used ; this, however, is given in three injections of 0·5 c.c., 1 c.c. and 1·5 c.c. with an interval of three weeks between the first and second and two weeks between the second and third injections.

While the period between 6 and 12 months of age is the ideal age, it must be emphasized that older children who have not been immunized should nevertheless be protected as well. In the case of older children, however, from about the age of 7 to 9 years, it may be advisable before immunization to carry out a test, the Schick test, to determine whether they are susceptible to diphtheria. A negative result will serve to indicate that immunization is neither necessary nor desirable as it may produce an unpleasant reaction. The Moloney test is also used. It may be done at the same time as the Schick test. This test will show whether the person whom it is proposed to immunize is unduly sensitive, in which case he should be desensitized with very small doses of anatoxin before giving the three injections of this substance. Thus these two tests serve the valuable purpose of determining whether a person is susceptible to the disease, and if so, whether he will prove unduly sensitive to a protective injection.

As the largest percentage of those wh do not resort to immunization, neglect to do so by reason of apathy or ignorance, vigorous and concerted action is required by local authorities and other health organizations to combat this. In a recent survey carried out by the Ministry of Health in England it was found that of those who did not make use of immunization 57 per cent. gave reasons which may be summarised as apathy and 43 per cent. were not convinced of the necessity of the procedure. To overcome these difficulties, each local authority should as a first step provide free facilities for immunization through its medical officer of health. Full publicity should be given to this free service and the need therefor. Every effort should be made, as far as possible, to contact parents personally so as to expalin the need for and simplicity of immunization. In the areas of smaller local authorities who do not employ health visitors, voluntary health organizations could play a particularly important role as propagandists in winning over apathetic or ignorant members of the public. In the larger local authorities the keeping of records, the sending out of cards and leaflets, the provision of clinics, and the use of health visitors for domiciliary visits, would go a long way twards improving the position. Nor should the schools be forgotten. The co-operation of headmasters and teachers would enable lists to be framed of the immunized and the non-immunized children, and valuable information would thus be gained.

Since 1938, in terms of an amendment of the Public Health Act, this Department refunds half the nett cost of the material used in immunization against diphtheria. It is perhaps not without significance that about a year thereafter the incidence sharply declined.

In the country districts where the magistrate is the local authority, all district surgeons are encouraged to carry out immunization against diphtheria in the course of their other duties. The service is offered free of charge to the children of indigent parents. The material is supplied by the Department and the district surgeons are paid for rendering the service.

In spite of the great value of immunizatoin, which has been amply proved, and the facilities offered by the Department, the procedure is still not used to anything like the extent it should be. The relatively high incidence of diphtheria still gives cause for concern and further, and perhaps compelling, measures will need to be taken if this unnecessary toll of child life is to be avoided.

In Natal diphtheria has been much more prevalent than during the previous year. The geographical distribution, which is largely urban, and the monthly incidence is readily seen from the accompanying map and graph.

Extract from Annual Report of Deputy Chief Health Officer, Railways.

Approximately 10,000 children have been immunized since December, 1943. It is significant that on Systems where active propaganda has been made and where a large percentage of pre-school children has been immunized there is a noticeable decrease in the incidence of diphtheria, whilst on Systems where this phase of the work has not received the desired attention no appreciabe difference is shown.

6. Acute Poliomyelitis (Infantile Paralysis).

In common with many other countries that experienced epidemics of acute poliomyelitis during the war years, this country suffered an outbreak during the year under review which assumed epidemic proportions and was the most serious outbreak hitherto experienced. Although the disease has occurred sporadically for many years, there have been fluctuations in the incidence from year to year and the endemic level has remained consistently low. Never before has the incidence been so high and widespread as during the past year ; nor has the mortality rate in the past been comparable with that of the recent epidemic. While it is known that a sharp outbreak occurred in 1918, which incidentally was also a war year, the absence of records, due to the fact that the disease was only made notifiable towards the end of that outbreak, precludes comparison with the outbreak during the past year.

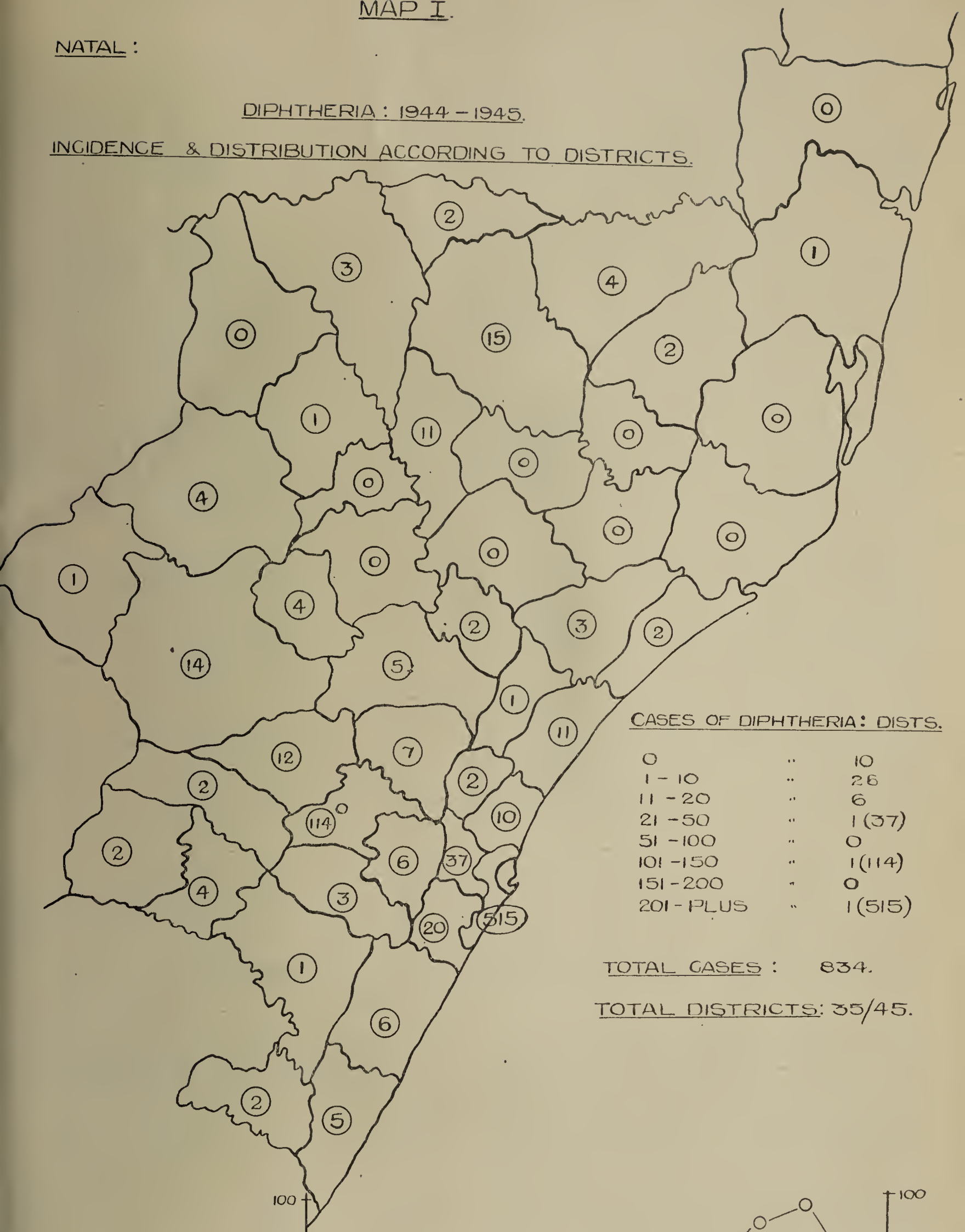
A sudden increase in the incidence of this disease had been reported in Johannesburg in February, 1944, when twenty cases were notified, a number far in excess of the average. In the following months, however, the incidence

MAP I.

NATAL :

DIPHTHERIA : 1944 – 1945.

INCIDENCE & DISTRIBUTION ACCORDING TO DISTRICTS.

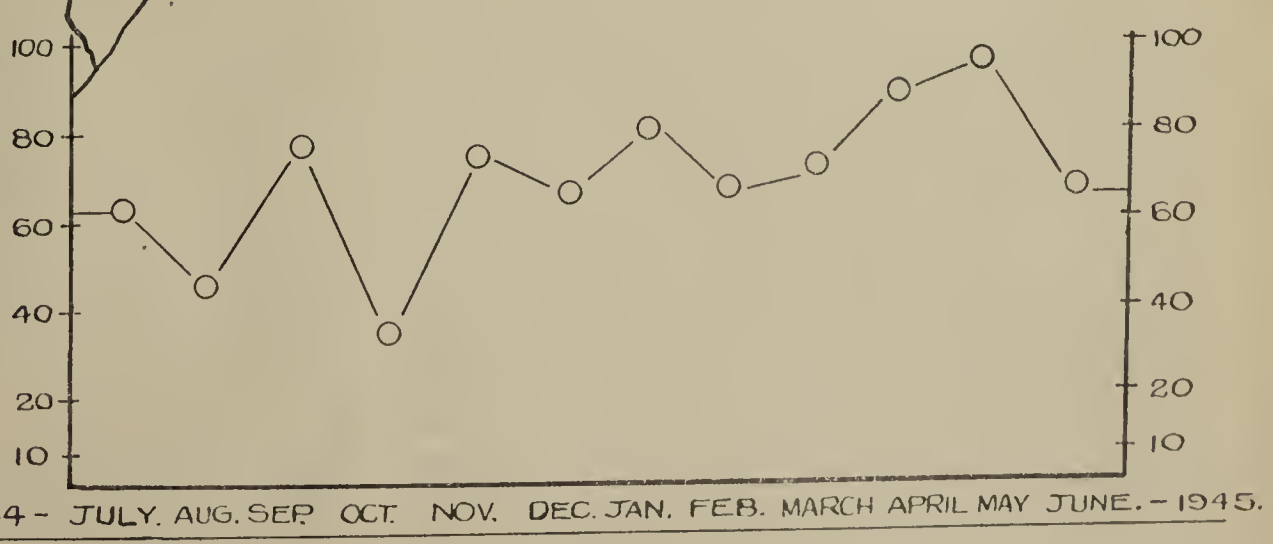


CASES OF DIPHTHERIA: DISTS.

0	"	10
1 – 10	"	26
11 – 20	"	6
21 – 50	"	1 (37)
51 – 100	"	0
101 – 150	"	1 (114)
151 – 200	"	0
201 – PLUS	"	1 (515)

TOTAL CASES : 834.

TOTAL DISTRICTS: 35/45.



DIPHTHERIA : MONTHLY INCIDENCE : 1944 – 1945.

TABLE 11.—DIPHTHERIA—DISTRIBUTION OF CASES AND DEATHS—BY RACE AND AGE—REPORTED DURING THE YEAR ENDED 30TH JUNE, 1915.

PROVINCE.	CASES. AGE GROUPS. Under 1 Year.	1–4.	5–9.	10 +.	Total.*	Incidence Rate per 100,000 of Population.	DEATHS. AGE GROUPS. Under 1 Year.	1–4.	5–9.	10 +.	Total.*	Incidence Rate per 100,000 of Population.
EUROPEAN.												
Cape (excluding Transkei)..	13	210	162	175	561	68·05	2	26	1	3	32	3·91
Transkei	—	7	1	6	14		—	1	—	—	1	
Natal	10	123	118	151	403	174·46	1	8	6	2	17	7·36
Transvaal	20	313	208	155	696	67·90	3	31	13	4	52	5·07
Orange Free State	3	31	17	35	86	43·22	1	2	2	—	5	2·51
UNION	46	684	506	522	1,760	76·52	7	68	22	9	107	4·65
NATIVE.												
Cape (excluding Transkei)..	10	46	10	25	91	4·28	4	6	—	—	10	0·44
Transkei	—	4	—	2	6		—	—	—	—	—	
Natal	35	84	45	117	281	15·80	10	25	2	2	39	2·19
Transvaal	34	130	97	90	351	11·85	10	30	1	2	43	1·45
Orange Free State	—	27	14	21	62	9·92	—	4	2	1	7	1·12
UNION	79	291	166	255	791	10·37	24	65	5	5	99	1·30
ASIATIC.												
Cape (excluding Transkei)..	—	3	1	—	4	32·52	—	—	—	—	—	0·00
Transkei	—	—	—	—	—		—	—	—	—	—	
Natal	5	34	18	22	79	38·28	—	1	—	—	1	0·48
Transvaal	2	9	19	4	34	111·48	1	2	2	2	7	22·95
Orange Free State	—	—	—	—	—	0·00	—	—	—	—	—	0·00
UNION	7	46	38	26	117	46·95	1	3	2	2	8	3·21
MIXED AND OTHER COLOURED RACES.												
Cape (excluding Transkei)..	25	146	70	59	301	38·50	5	18	2	2	27	3·55
Transkei	—	2	1	—	3		—	—	1	—	1	
Natal	4	10	14	19	47	215·60	—	—	—	—	—	0·00
Transvaal	1	9	8	7	25	41·88	—	2	1	—	3	5·03
Orange Free State	—	—	1	1	2	11·30	—	—	—	—	—	0·00
UNION	30	167	94	86	378	42·53	5	20	4	2	31	3·49
TOTAL—ALL RACES.												
Cape (excluding Transkei)..	48	405	243	259	957	25·05	11	50	3	5	69	1·82
Transkei	—	13	2	8	23		—	1	1	—	2	
Natal	54	251	195	309	810	36·20	11	34	8	4	57	2·55
Transvaal	57	461	332	256	1,106	27·13	14	65	17	8	105	2·58
Orange Free State	3	58	32	57	150	17·82	1	6	4	1	12	1·43
UNION	162	1,188	804	889	3,046	27·70	37	156	33	18	245	2·21

* Includes cases where the age is not stated.

TABLE 12.—INCIDENCE OF DEATHS FROM DIPHTHERIA PER 100,000 OF POPULATION—EUROPEANS.

Year.	Rate per 100,000 of Population.	Year.	Rate per 100,000 of Population.
1920	12·33	1933	4·66
1921	11·17	1934	6·27
1922	14·01	1935	3·95
1923	15·51	1936	4·48
1924	10·93	1937	5·87
1925	14·23	1938	6·53
1926	6·56	1939	6·76
1927	6·32	1940	6·97
1928	8·97	1941	5·92
1929	5·83	1942	7·22
1930	8·18	1943	6·71
1931	7·05	1944	6·17
1932	4·68		

declined. During the winter months there were no reports of an abnormal incidence from other parts of the country. In September, 1944, an unusually large number of cases was reported in Durban. This unexpected and explosive outbreak served to focus public attention on the disease and created alarm and apprehension among both the medical profession and the lay public. The incidence in Durban remained high during the months of October, November and December. Towards the end of October, 1944, the first case was discovered in Cradock, in the Eastern Cape Province, and within a month twenty-seven cases were notified. This town had what amounted to an explosive outbreak limited to a period of approximately one month as no further cases occurred during the subsequent months.

The disease made its appearance about the same time in Johannesburg. A progressive increase in the number of cases was reported during November and the first half of December not only in Johannesburg but also on the Eastern Witwatersrand. This was followed by a rapid decline in the incidence, but sporadic cases continued to occur at intervals until the end of the summer of 1945. In Pretoria, where sporadic cases had occurred during the late winter and early spring months, four cases were notified in October, seven in November, and twelve in December, the peak month. Thereafter the incidence gradually declined but cases were reported at intervals until June, 1945. Cape Town, too, experienced a high incidence during this period with the maximum incidence somewhat later in the year. Other towns and districts scattered throughout the country were involved in outbreaks of varying intensity, some with relatively high incidence rates. In the Northern Transvaal the incidence was confined to the late summer and autumn, and, while the number of cases reported

was not high, the incidence was, nevertheless, above the normal. When considered as a whole the maximum incidence occurred in November and December which was considerably earlier than usual for this disease.

The accompanying maps serve to show the widespread incidence of the disease in the Union during the year when 1,380 cases were notified. It will be observed that the majority of the districts in all the provinces were affected, but in many the incidence was confined to sporadic cases. In Natal where 294 cases were reported, 37 out of the 45 districts were affected, but the greatest number of cases occurred in the Durban, Pietermaritzburg and the Inanda (Verulam) areas. The peak of the outbreak in this province was reached in December, 1944, with a total of 69 cases. In the Cape Province the number of cases totalled 387 and the Cape Town, Cradock, Port Elizabeth, Graaff-Reinct, East London and Paarl areas had the greatest number of cases. January, 1945, was the peak month in this province when 71 cases were notified. The incidence rate per 100,000 population was the lowest of the four provinces. The Transkei, which forms an integral part of this province, and is inhabited by a predominantly native population totalling more than a million, reported a remarkably low incidence. Only seven cases were notified of which two were stated to have contracted the disease outside this territory.

The number of cases in the Transvaal totalled 542, the highest of the four provinces, and Johannesburg, Pretoria and Springs recorded the greatest number of cases. The Eastern Witwatersrand with a population exceeding that of the Western Witwatersrand reported a greater number of cases than the latter area. In the peak month, December, 1944, 176 cases were reported in this province.

The lowest number of cases, 150, was reported in the Orange Free State, but the incidence rate per 100,000 population was the highest of the four provinces. The areas most affected were Kroonstad, Frankfort, Bothaville, Bloemfontein, Harrismith and Bethlehem. During the peak month, December, 1944, 39 cases were reported, but in the following month, January, 1945, there was a sharp decline only 14 cases being reported. In February, 1945, there was another steep rise in the incidence when 32 cases were reported, a number only seven less than the total for the peak month. During March there was a decided decline which was maintained in the ensuing months.

The incidence rate for the country as a whole was 12·47 per 100,000 population. The provincial incidence rates per 100,000 population ranged from 17·82 in the Orange Free State, the highest, to 10·07 in the Cape Province, the lowest. The racial incidence rates per 100,000 population were European 35·13, Native 5·53, Coloured 11·70, and Asiatic 17·82. Of the 1,380 cases reported in the Union 912 (66 per cent.) occurred in the urban areas and 468 (34 per cent.) in the rural areas. The European cases totalled 808 (58·5 per cent.) of which 636 (79 per cent.) occurred in the urban areas and 172 (21 per cent.) in the rural areas. The number of Native cases totalled 422 (31 percent.) of which 171 (40·5 per cent.) were reported in the urban areas and 251 (59·5 per cent.) in the rural areas. Of the 106 (7·8 per cent.) Coloured cases reported 74 (70 per cent.) were urban and 32 (30 per cent.) rural. The Asiatic distribution of the 44 cases (3·2 per cent.) was 31 (70·5 per cent.) urban and 13 (29·5 per cent.) rural.

The marked incidence of this disease in the younger age group, which has been a feature of the epidemics in most of the other countries, was not apparent in the recent epidemic in this country. In the former countries from two-thirds to three-quarters and higher of the cases reported were in the under five year age group. During the recent epidemic 669 (49 per cent.) of the total number of reported cases occurred in the under five year age group, 317 (23 per cent.) in children between the ages of 5 and under 10, 237 (17 per cent.) in the 10 to 19 age group and 152 (11 per cent.) in persons 20 or more years of age. Analysis of the racial incidence in the various age groups revcals that 333 (41 per cent.) of the European cases occurred in the under five year age group, 256 (61 per cent.) of the Native cases, 23 (52 per cent.) of the Asiatic cases and 57 (54 per cent.) of the Coloured cases in the same age group. Owing to the absence of figures the age group incidence in the urban and rural areas cannot be stated. These data indicate that there has been a marked shift in the distribution from younger to older persons.

The total number of deaths during this outbreak was 104 with a death rate of 0·94 per 100,000 of population. Of the four provinces the highest death rate per 100,000 population occurred in Natal, 1·48, and the lowest in the Cape Province, 0·56. The death rates per 100,000 population of the various races were European 2·83, Native 0·33, the lowest, Coloured 0·45 and Asiatic 4·01, the highest.

The maximum number of deaths in a single month occurred in December, 1944, the peak month of the epidemic, when 40 were notified. This number represents 38·5 per cent. of the total number of deaths for the entire year. Of the four provinces the greatest number of deaths occurred in the Transvaal where 44 (42 per cent.) were notified, and the smallest number in the Orange Free State whose total was 5 (4·8 per cent.). The urban areas accounted for 85 (82 per cent.) of the deaths during the year and the rural areas for 19 (18 per cent.).

The number of deaths in the various age groups were 40 (38·5 per cent.) in children under five years of age, 16 (15·4 per cent.) for children between the ages of five and ten, 31 (29·8 per cent.) in the 10 to 19 year age group and 17 (16·3 per cent.) in those 20 and more years of age. Infants under one year of age accounted for 8 (7·7 per cent.) of the total number of deaths.

The case mortality rate for the country as a whole was 7·5 per cent., and for the different racial groups European 8 per cent., Natives 5·9 per cent., Coloured 3·8 per cent., and Asiatic 22·7 per cent. A significant feature of the case mortality rate was that the lowest rate occurred in children in the group between the ages of five and under ten while the highest rate occurred in the group between ten and under twenty years of age. Comparison between the two main racial groups reveals that the case mortality rate in infants under one year of age was higher in Natives (9·3 per cent.) than in Europeans (6·4 per cent.), but in the other age groups the European rates were higher.

The origin of the recent epidemic cannot be stated with certainty, but it is generally believed that it began in Durban in September, 1944. It may have been due to the introduction of a new strain of virus from outside the Union to which the child and adult populations were not immune. When it is considered that there was a considerable volume of traffic during the war between South Africa and other countries which had suffered from epidemic poliomyelitis, it is conceivable that the epidemic strain could have been introduced by carriers among the service personnel. Although the epidemic began in September, 1944, the sporadic cases which occurred in the earlier months of 1944 may merely have been the forerunners of a sequence of events preceding the actual epidemic. There may have been many mild and abortive cases during the winter months which were not recognised. On the other hand it is known that sporadic cases have also occurred at other times and these have not necessarily presaged an epidemic within a short period of time.

As soon as it became evident that the outbreak was likely to become widespread and severe, all possible measures were taken by the Department. A pamphlet dealing with the disease in all its aspects was made available. In this pamphlet all the precautionary and preventive measures were set out. In view of the vital necessity for adequate and correct treatment for the purpose of restoring the muscle function of the affected parts of the body suitable arrangements were made by all the Provincial authorities to provide the necessary hospital accommodation for those afflicted. When it was found necessary to transport cases from Cradock to Cape Town, an ambulance train ward car was made available by the Railway Administration. Furthermore the Director of Hospitals, Transvaal, and the medical officers of health in the various towns worked in close co-operation with the Department.

Early in the epidemic arrangements were made by the Department to collect information about each case. A questionnaire was drawn up to include all relevant information, and as each case was notified a form was immediately sent to the medical practitioner concerned. While a large proportion of the completed forms was returned, it is to

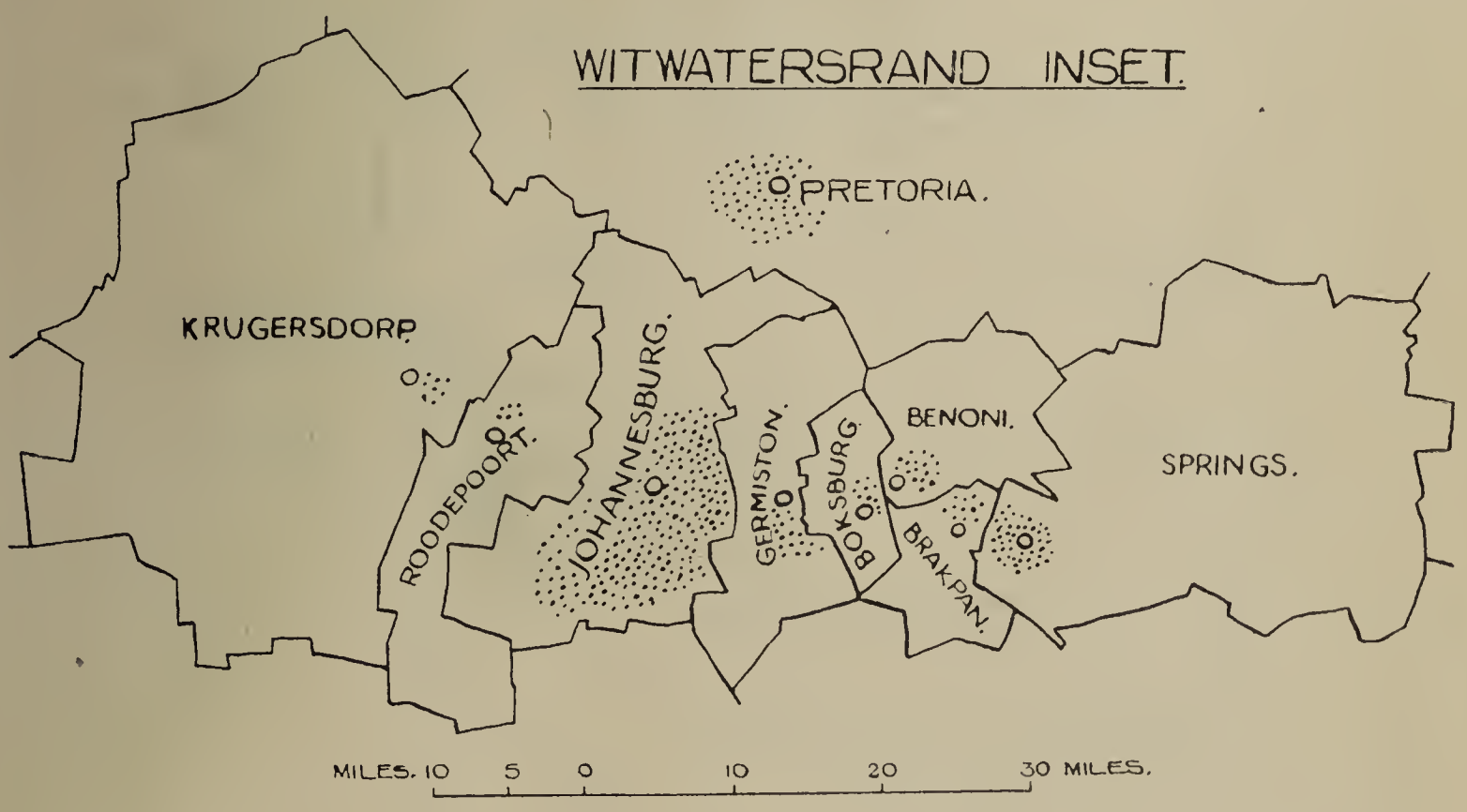
MAP II.

ACUTE POLIOMYELITIS (INFANTILE PARALYSIS).

DISTRIBUTION OF CASES — WITWATERSRAND & PRETORIA.

EACH DOT REPRESENTS A CASE IN THE MAGISTERIAL DISTRICT CONCERNED.

(INCLUDING BOTH URBAN & RURAL AREAS).



MAP III.

ACUTE POLIOMYELITIS. (INFANTILE PARALYSIS).

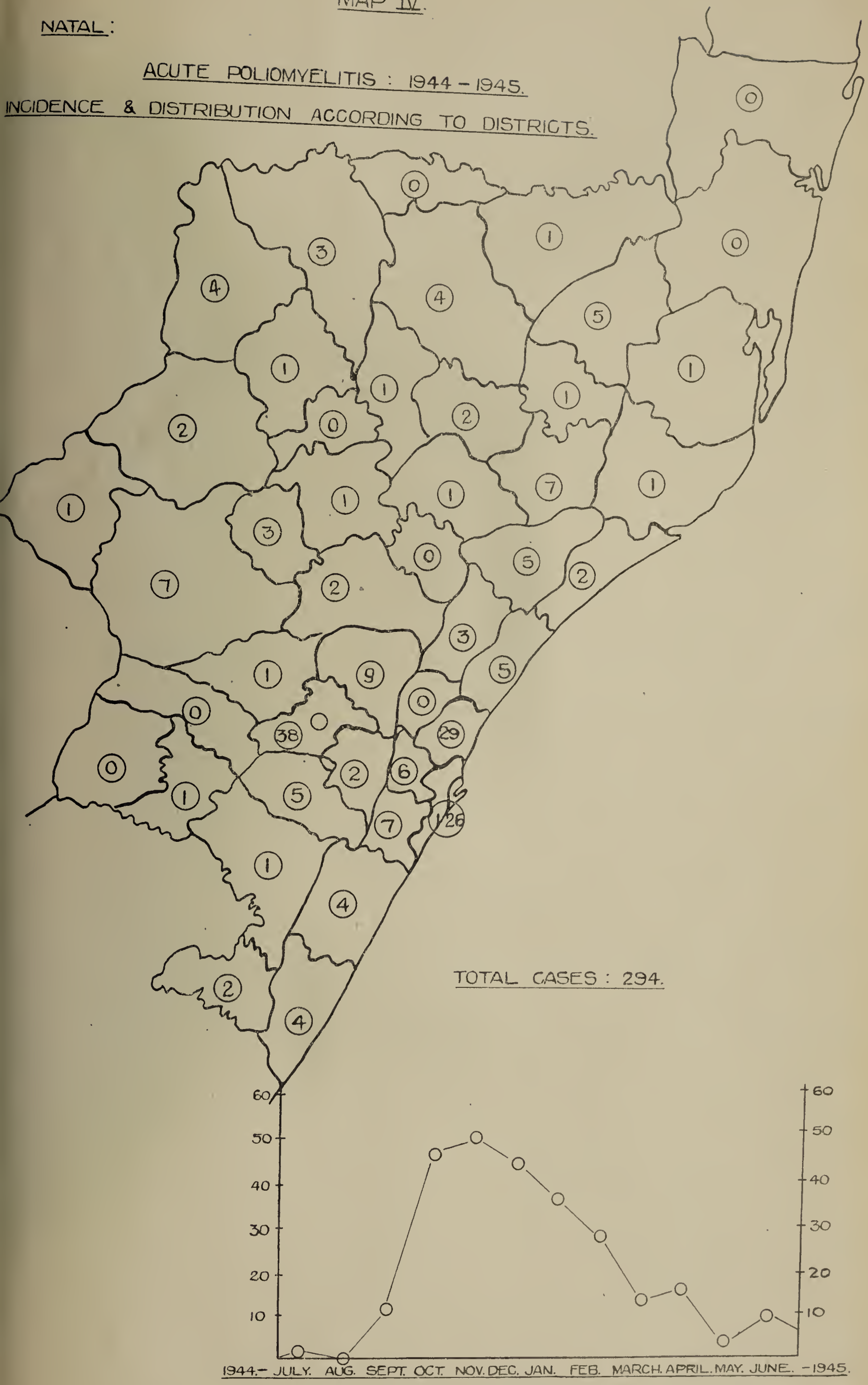
DISTRIBUTION OF CASES – EACH DOT REPRESENTS ONE CASE.

MAP IV.

NATAL:

ACUTE POLIOMYELITIS : 1944 - 1945.

INCIDENCE & DISTRIBUTION ACCORDING TO DISTRICTS.



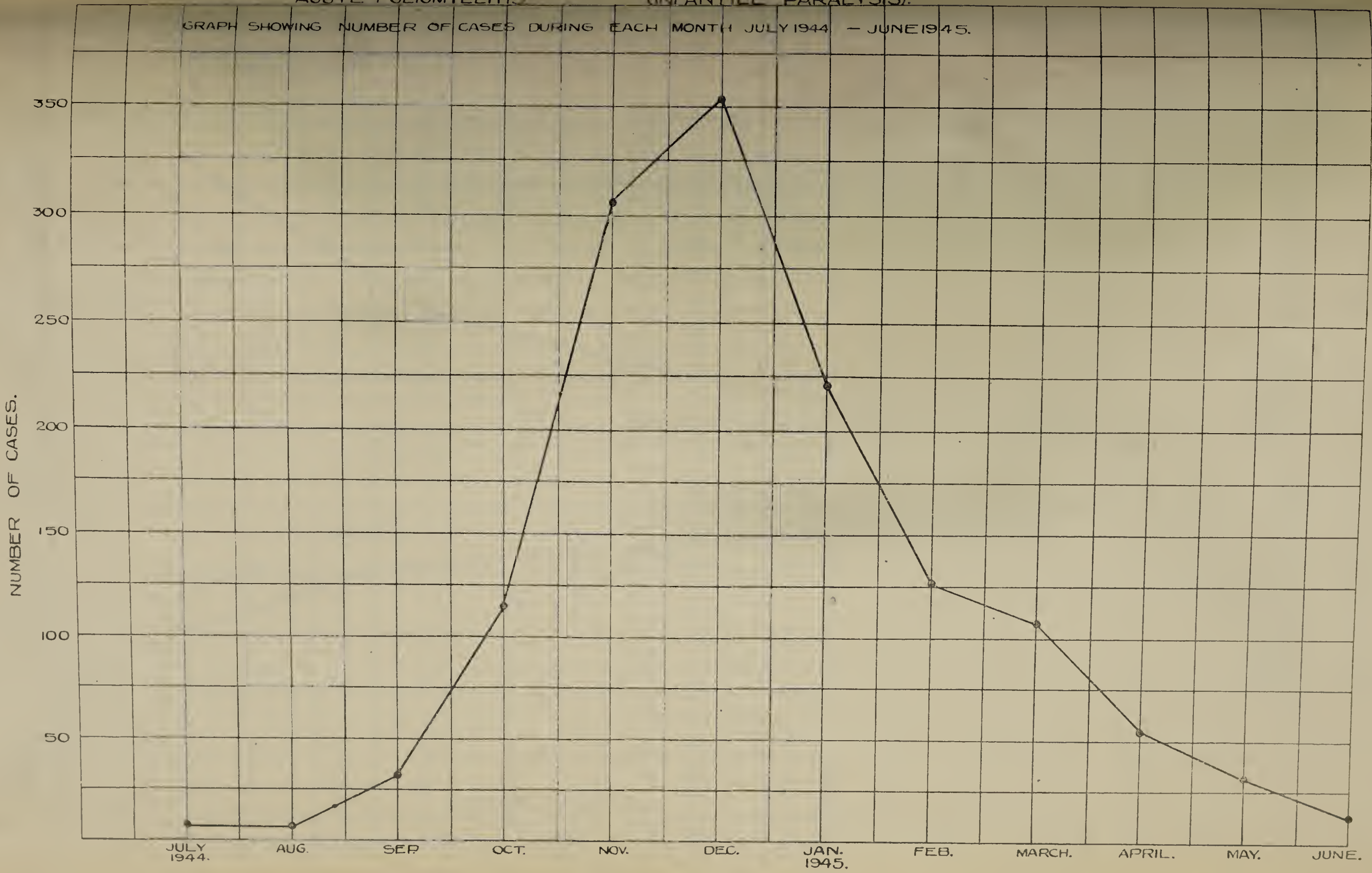
TOTAL CASES : 294.

ACUTE POLIOMYELITIS : MONTHLY INCIDENCE : 1944 - 1945.

GRAPH I.

ACUTE POLIOMYELITIS (INFANTILE PARALYSIS).

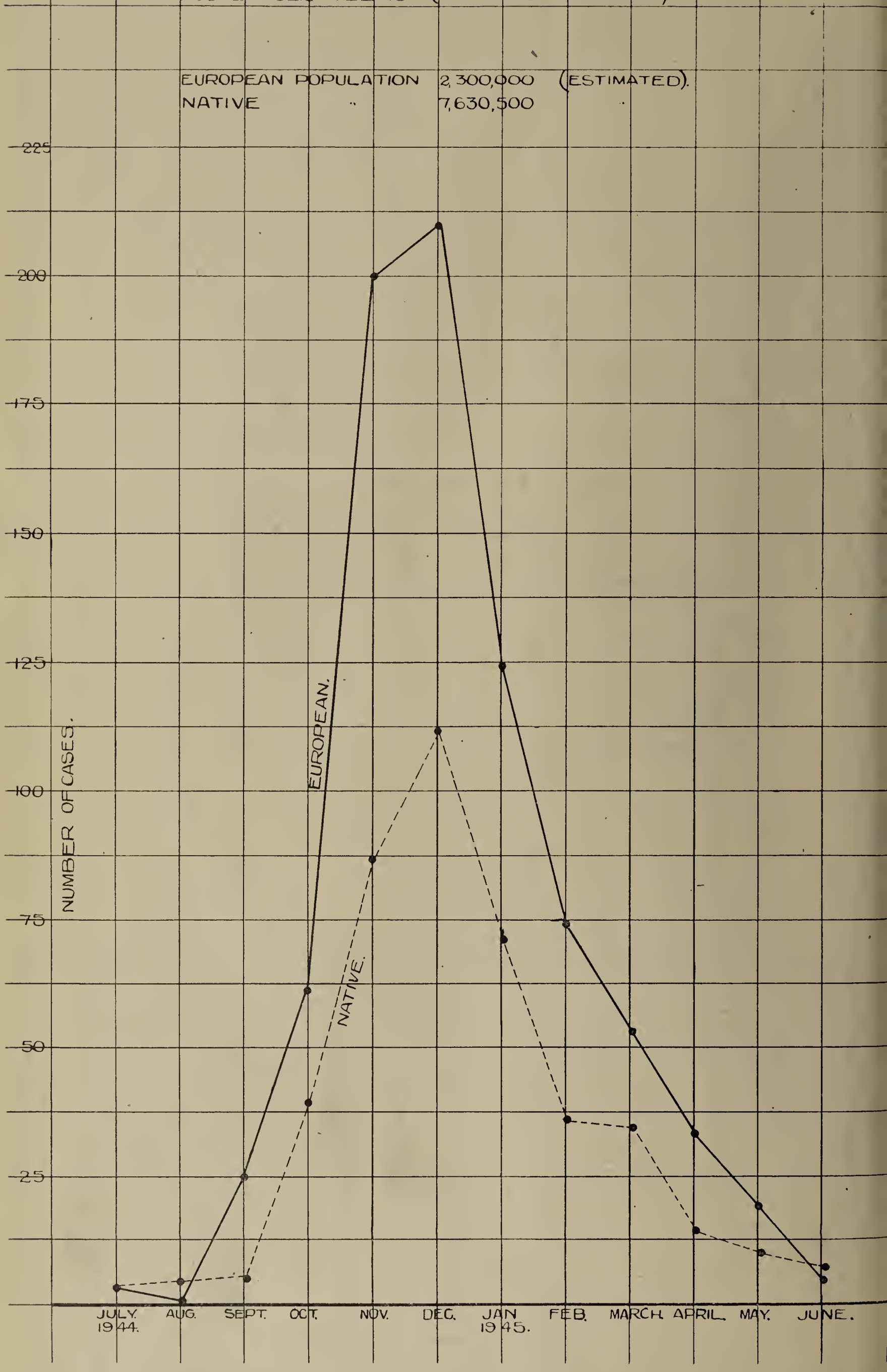
GRAPH SHOWING NUMBER OF CASES DURING EACH MONTH JULY 1944 — JUNE 1945.



GRAPH II.

ACUTE POLIOMYELITIS (INFANTILE PARALYSIS).

EUROPEAN POPULATION 2,300,000 (ESTIMATED).
NATIVE " 7,630,500 "



Province.	Cases: Age. Under 1 Year.	1–4.	5–9.	10–19.	20 +.	Total Cases.*	Incidence Rate per 100,000 of Population.	Deaths: Age. Under 1 Year.	1–4.	5–9.	10–19.	20 +.	Total Deaths.	Death Rate per 100,000 of Population.
European.														
Cape (excluding Transkei).....	8	71	43	32	24	180	21·66	—	4	2	4	1	11	1·30
Transkei.....	—	—	1	—	2	3		—	—	—	—	—	—	
Natal.....	4	39	34	30	17	126	54·55	1	2	5	4	3	15	6·49
Transvaal.....	32	152	133	63	39	420	40·98	2	10	6	12	7	37	3·61
Orange Free State.....	3	24	23	23	6	79	39·70	—	—	1	1	—	2	1·01
Union.....	47	286	234	148	88	808	35·13	3	16	14	21	11	65	2·83
Native.														
Cape (excluding Transkei).....	12	65	16	8	7	108	4·94	—	5	1	—	—	6	0·26
Transkei.....	1	1	1	1	—	4		—	—	—	—	—	—	
Natal.....	18	54	18	28	15	133	7·48	3	3	—	3	1	10	0·56
Transvaal.....	9	57	18	15	9	108	3·65	1	2	—	1	2	6	0·20
Orange Free State.....	3	36	12	9	9	69	11·04	—	—	1	1	1	3	0·48
Union.....	43	213	65	61	40	422	5·53	4	10	2	5	4	25	0·33
Asiatic.														
Cape (excluding Transkei).....	—	3	—	—	1	4	32·52	1	—	—	—	—	1	8·13
Transkei.....	—	—	—	—	—	—		—	—	—	—	—	—	
Natal.....	3	11	2	6	8	30	14·54	—	4	—	3	1	8	3·88
Transvaal.....	2	4	2	1	1	10	32·79	—	—	—	—	1	1	3·28
Orange Free State.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Union.....	5	18	4	7	10	44	17·82	1	4	—	3	2	10	4·01
Mixed and Other Coloured Races.														
Cape (excluding Transkei).....	8	44	11	19	13	95	12·03	—	2	—	2	—	4	0·51
Transkei.....	—	—	—	—	—	—		—	—	—	—	—	—	
Natal.....	1	2	1	—	1	5	22·94	—	—	—	—	—	—	—
Transvaal.....	—	1	1	2	—	4	6·70	—	—	—	—	—	—	—
Orange Free State.....	—	1	1	—	—	2	11·30	—	—	—	—	—	—	—
Union.....	9	48	14	21	14	106	11·70	—	2	—	2	—	4	0·45
Total—All Races.														
Cape (excluding Transkei).....	28	183	70	59	45	387	10·07	1	11	3	6	1	22	0·56
Transkei.....	1	1	2	1	2	7		—	—	—	—	—	—	
Natal.....	26	106	55	64	41	294	13·14	4	9	5	10	5	33	1·48
Transvaal.....	43	214	154	81	49	542	13·30	3	12	6	13	10	44	1·08
Orange Free State.....	6	61	36	32	15	150	17·82	—	—	2	2	1	5	0·60
Union.....	104	565	317	237	152	1,380	12·47	8	32	16	31	17	104	0·94

* Includes cases where the age is not stated.

Table 14.—Acute Poliomyelitis.

Notifications and Deaths—By Month—Reported during the Year ended 30th June, 1945.

Month.	Cape (excluding Transkei).				Transkei.				Natal.				Transvaal.				Orange Free State.				Union.			
	European.	Native.	Asiatic.	Coloured.	European.	Native.	Asiatic.	Coloured.	European.	Native.	Asiatic.	Coloured.	European.	Native.	Asiatic.	Coloured.	European.	Native.	Asiatic.	Coloured.	European.	Native.	Asiatic.	Coloured.
NOTIFICATIONS.																								
1944, July	—	—	—	—	—	—	—	—	—	2	—	—	2	1	—	—	1	—	—	—	3	3	—	—
August	—	2	—	1	—	—	—	—	1	—	—	—	—	1	—	—	—	1	—	—	1	4	—	1
September	2	—	—	1	—	—	—	—	19	4	2	—	4	1	—	—	—	—	—	—	25	5	2	1
October	6	8	—	1	2	—	—	—	24	23	11	2	27	6	—	—	3	2	—	—	62	39	11	3
November	32	22	—	14	—	—	—	—	29	27	6	2	116	23	1	1	23	15	—	—	200	87	7	17
December	30	18	—	22	—	—	—	—	26	38	5	—	141	32	2	1	13	24	—	2	210	112	7	25
1945, January	31	21	2	17	—	3	—	—	13	22	1	—	74	17	4	2	6	8	—	—	124	71	7	19
February	24	13	—	12	—	—	—	—	6	8	2	—	21	6	2	—	23	9	—	—	74	36	4	12
March	25	10	2	16	—	—	—	—	2	6	1	—	18	11	1	—	8	7	—	—	53	34	4	16
April	19	8	—	6	—	—	—	—	2	2	1	1	10	3	—	—	2	1	—	—	33	14	1	7
May	7	4	—	4	1	1	—	—	4	—	—	—	7	5	—	—	—	—	—	—	19	10	—	4
June	4	2	—	1	—	—	—	—	—	1	1	—	—	2	—	—	—	2	—	—	4	7	1	1
Total	180	108	4	95	3	4	—	—	126	133	30	5	420	108	10	4	79	69	—	2	808	422	44	106
DEATHS.																								
1944, July	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—
August	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
September	—	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	2	—	—	—
October	—	—	—	—	—	—	—	—	2	3	1	—	1	—	—	—	—	—	—	—	3	3	1	—
November	2	1	—	—	—	—	—	—	3	2	—	—	4	—	—	—	—	—	—	—	9	3	—	—
December	6	1	—	2	—	—	—	—	3	2	—	—	19	5	—	—	1	1	—	—	29	9	—	2
1945, January	1	4	1	2	—	—	—	—	3	1	—	—	6	1	—	—	—	—	—	—	10	6	1	2
February	—	—	—	—	—	—	—	—	2	—	2	—	—	—	—	—	—	—	—	—	2	—	2	—
March	—	—	—	—	—	—	—	—	—	2	1	—	4	—	1	—	—	2	—	—	4	4	2	—
April	2	—	—	—	—	—	—	—	1	—	3	—	1	—	—	—	1	—	—	—	5	—	3	—
May	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
June	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—
Total	11	6	1	4	—	—	—	—	15	10	8	—	37	6	1	—	2	3	—	—	65	25	10	4

Table 15.—Acute Poliomyelitis.

Distribution of Cases and Deaths by Race and Area.

Reported during the Year ended 30th June, 1945.

Province.	Cases.				Deaths.			
	Urban.	Rural.	Total.	Incidence Rate per 100,000 of Population.	Urban.	Rural.	Total.	Death Rate per 100,000 of Population.
I.—European.								
Cape (excluding Transkei)	137	43	180	21·66	9	2	11	1·30
Transkei	1	2	3		—	—	—	
Natal	110	16	126	54·55	12	3	15	6·49
Transvaal	346	74	420	40·98	31	6	37	3·61
Orange Free State	42	37	79	39·70	2	—	2	1·01
Total	636	172	808	35·13	54	11	65	2·83
II.—Native.								
Cape (excluding Transkei)	51	57	108	4·94	3	3	6	0·26
Transkei	1	3	4		—	—	—	
Natal	44	89	133	7·48	8	2	10	0·56
Transvaal	57	51	108	3·65	5	1	6	0·20
Orange Free State	18	51	69	11·04	1	2	3	0·48
Total	171	251	422	5·53	17	8	25	0·33
III.—Asiatic.								
Cape (excluding Transkei)	2	2	4	32·52	1	—	1	8·13
Transkei	—	—	—		—	—	—	
Natal	20	10	30	14·54	8	—	8	3·88
Transvaal	9	1	10	32·79	1	—	1	3·28
Orange Free State	—	—	—	—	—	—	—	—
Total	31	13	44	17·82	10	—	10	4·01
IV.—Coloured.								
Cape (excluding Transkei)	65	30	95	12·03	4	—	4	0·51
Transkei	—	—	—		—	—	—	
Natal	5	—	5	22·94	—	—	—	—
Transvaal	4	—	4	6·70	—	—	—	—
Orange Free State	—	2	2	11·30	—	—	—	—
Total	74	32	106	11·70	4	—	4	0·45
V.—Total (All Races).								
Cape (excluding Transkei)	255	132	387	10·07	17	5	22	0·56
Transkei	2	5	7		—	—	—	
Natal	179	115	294	13·14	28	5	33	1·48
Transvaal	416	126	542	13·30	37	7	44	1·08
Orange Free State	60	90	150	17·82	3	2	5	0·60
Total	912	468	1,380	12·47	85	19	104	0·94

be regretted that the entire number have not been received. However, the number returned is sufficiently large and representative to give an adequate picture of the epidemic as a whole. It is expected that a publication will be issued in the near future in which the epidemic will be reviewed in all its aspects.

In view of the many unsolved problems in the epidemiology of poliomyelitis only factual material has been presented and no attempt has been made to explain any of the facts concerning the epidemic. More intensive and extensive research work in the laboratories, and most important of all, in the field will have to be undertaken in order to solve the problems. It can be stated, however, that considerable research work has been carried out and still continues both in America and Britain.

Extract from Annual Report by Deputy Chief Health Officer, Railways.

Poliomyelitis.—In the disturbing outbreak of infantile paralysis which was general throughout the Union during the year, 30 Sick Fund beneficiaries were notified as having contracted the disease. The cases in question were notified from six Systems. In Natal they occurred chiefly in the Rossburgh area which includes the suburbs from Wests to Umbilo, and Umbilo to Malvern, whilst on the Cape Western System the Cape Peninsula was chiefly affected. The disease was almost absent outside of the large urban centres. The peak period was from October to December.

Active propaganda work was carried out by the health and welfare staff in an endeavour to minimise the danger of infection among the staff and their dependants. The staff were advised of the danger of flies, overcrowding, attending large public gatherings, using unboiled milk and raw vegetables, etc.

Precautionary measures were also vigorously pursued to protect the travelling public. Hand and roller towels were withdrawn temporarily from passenger trains. It was also arranged for floors of passenger saloons, after they had been scrubbed, to be finally wiped over with a 1 in 40 disinfectant solution and for all leather upholstery in saloons to be wiped over with a cloth dipped in 1 in 40 disinfectant solution. A stronger disinfectant solution is used in the cleaning of lavatories and bedding staff have been instructed to clean saloons, particularly the lavatories, more frequently en route.

As a result of an outbreak of poliomyelitis at Cradock during November and December, 1944, it was decided to convey a number of the patients for manipulative treatment at Cape Town and on the urgent representations of the local authority, Cradock, the Defence Authorities gave permission for the use of one of the ambulance train ward cars to convey patients from Cradock to Cape Town. The internal working arrangements of this car were supervised by this office.

7. Leprosy.

A conference of departmental medical officers and others interested in leprosy was arranged at the Pretoria Leper Institution on the 18th and 19th September, 1944. In addition to the medical officers of the various institutions, the conference was attended by representatives from Swaziland, Basutoland and Northern Rhodesia, as well as by several members of the Leprosy Advisory Committee.

In addition to demonstrations of treatment technique a parade of selected cases, the screening of two films on leprosy prepared Departmentally, and an inspection of the institution, the following papers were presented :—

"Some of the Problems of Leprosy", by Dr. F. S. Drewe, Medical Officer, 'Mkambati Leper Institution.

"Criteria of Curé", by Dr. A. R. Davison, Medical Superintendent, Pretoria Leper Institution.

"Leper Institutions", by Dr. A. R. Davison.

"Decolourising of Mycobacterium Leprae", by Dr. A. R. Davison.

"Compulsory Segregation", by Dr. A. R. Davison.

"The Transmission of Leprosy by Cockroaches", by Dr. B. Moiser, O.B.E., Medical Superintendent, Ngomakwan Leper Institution, Southern Rhodesia.

"Acid Fast Oval Bodies in Cockroaches" by Dr. B. Moiser, O.B.E.

"Conjugal Infections in Leprosy", by Dr. B. Moiser, O.B.E.

"Classification of Leprosy", by Dr. A. R. Davison.

"The Campaign against Leprosy in the Transkei", by Dr. P. A. Thornton, Medical Officer, Emjanyana Leper Institution.

These demonstrations and papers stimulated full discussion on the departmental policies governing institutional segregation, home segregation, probational discharge and general methods and technique of treatment.

The undoubted success of this conference was responsible for the suggestion that future meetings of the Leprosy Advisory Committee should coincide with an annual conference of institutional medical officers, to which leprologists from neighbouring British protectorates and colonies, as well as other colonial governments in Southern Africa should be invited.

Institutions.

The building programme which includes the replacement of unsatisfactory buildings or the provision of new wards at the various institutions is proceeding satisfactorily. At Pretoria the old chronic wards have been demolished and new wards for 120 native patients provided. A new nurses' home and new institution store are now completed. At Amatikulu the old native-type hut for the patients have been replaced by semi-detached cottages.

Statistics.

Table 16 shows a total of 66 European patients at present in the Pretoria Leper Institution which is the only one which caters for European patients. This compares favourably with the figure for 1913 when 190 were in isolation. The figure for the Mixed Coloured patients has dropped from 345 in 1913 to 95 in 1945. The total number of native patients in all the institutions is not so satisfactory having risen from 1,700 in 1913 to 2,150 in 1945. This is explained by the fact that the natives now come forward more readily for treatment. In the early days the average duration of the disease prior to admission was over nine years. Now the average duration is under two years.

It will be noted from Table 17 that during the year 434 patients were discharged from the institutions as their disease had become arrested. These cases are kept under observation for six years after discharge. A total of 2,043 cases are still under surveillance—*vide* Table 18.

Table 16.—Leper Institutions: Patients therein on 30th June, 1945.

Institution.	Europeans.		Native.		Mixed Coloured.		Asiatic.		Total.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Persons.
Pretoria	40	26	536	319	62	33	7	3	645	381	1,026
Mkambati	—	—	97	93	—	—	—	—	97	93	190
Emjanyana	—	—	275	248	—	—	—	—	275	248	523
Amatikulu	—	—	275	174	—	—	—	—	275	174	449
Bochem	—	—	70	63	—	—	—	—	70	63	133
Total	40	26	1,253	897	62	33	7	3	1,362	859	2,321

TABLE 17.—LEPROSY: FIRST ADMISSIONS, RECRUDESCED CASES, DISCHARGES AND DEATHS, YEAR ENDED 30TH JUNE, 1945.

Institution.	Admissions for First Time.	Recrudesced.	Discharged.	Died.
Pretoria.....	285	49	160	126
Ifkambati.....	27	10	44	10
Emjanyana.....	134	42	152	50
Amatikulu.....	105	15	56	58
Bochem.....	18	1	11	19
TOTAL.....	569	117	434	263

TABLE 18.—LEPROSY CASES REMAINING IN THEIR OWN HOMES ON 30TH JUNE, 1945.

	Certified and Awaiting Removal to Leper Institution.	Home Segregated.	Discharged from Leper Insitutions, Still under Surveillance.	Total.
Cape Province (excluding Transkei)	2	2	174	178
Transkei.....	19	2	719	740
Transvaal.....	5	1	694	700
Natal.....	11	—	319	330
Orange Free State	2	1	137	140
UNION.....	39	6	2,043	2,088

3. MALARIA.

Transvaal.

During the year under review a scheme for the direct Departmental control of malaria was put into operation in the Transvaal. The area included in this scheme may be divided into three sections, namely the Springbok Flats, including the Groblersdal magisterial district, approximately 2,000 square miles in extent, the Olifants and Elands River valleys and their tributaries over a distance of approximately 100 miles, and thirdly an area in the Eastern Transvaal approximately 75 miles in extent along the Crocodile River and its tributaries. The scheme falls naturelly into two divisions, namely those areas where State control is exercised exclusively, and the areas where the farmers and public generally assist with the control.

State control is exercised over a large terrain in the Olifants River and the Elands River valleys going up towards the Rust-der-Winter irrigation scheme in the Hammanskraal region. The State also exercises control in the Crocodile–Komatipoort River valleys and adjacent areas in the Eastern Transvaal. The work entailed here consisted of oiling of all waters acting as breeding places of the malaria mosquito vector, particularly in the winter breeding grounds of the Olifants River valley, which we believe to be the source of epidemic malaria. This work is controlled by hut-to-hut extermination of adult mosquitoes in the region. Moreover, mobile oiling gangs deal with the provincial roads throughout the whole of the regions which are controlled by the State.

With regard to the control by farmers and the public generally each magisterial area is grouped either by the farmers themselves through the Farmers' Association or by the Department into units of suitable workable areas. By the middle of the malaria season 105 such groups were formed and were operating satisfactorily. A group leader is nominated and he holds all anti-malaria equipment for the group. The equipment and the necessary labour gangs are supplied by the Department and are under its control. These gangs carry out the anti-larval and the anti-adult work for the unit. In addition to this, native gangs consisting of farm labourers are under the control of the employer and he is entitled to insecticidal pumps and to the provision of insecticide at cheap rates. The mobile oiling squad in each area is in immediate control of all activities and is responsible to the inspector of the area. The latter has a much larger terrain under him for which he is responsible to the Senior Malaria Officer.

A Central Malaria Committee established at Tuinplaats was found to be very useful. Here farmers from different parts of the controlled area met from time to time to discuss among themselves and with the members of the malaria control staff difficulties and measures to be adopted in dealing with the malaria problem.

It is quite impossible to establish definite statistics on the effect of this work, but there is sufficient evidence to show that practically no new malaria worthwhile mentioning has occurred within the controlled areas. As an example the Groblersdal area and the Olifants River valley may be quoted. In this region the incidence of malaria has been high every year. During this season, however, practically no new malaria has occurred, even among the natives living on the banks of the Olifants River. The same position obtains on the vast Springbok Flats. During the previous season the farmers in this area had no labour, due to malaria, to reap their crops. This year the disease is entirely absent. Outside the controlled zones the incidence of malaria has been seasonal in the west while in the east is has been above normal.

Perhaps the most effective method of illustrating the results achieved is to compare the catches of adult vector mosquitoes in the controlled areas with those in the uncontrolled areas. In March, 1945, the average catch per hut was one mosquito in the controlled areas as compared with 36 mosquitoes per hut in the uncontrolled areas, while in April the corresponding figures were one and 12 mosquitoes per hut in the controlled and uncontrolled areas respectively. Broadly speaking the campaign consists of weekly oiling of all *anopheles gambiae* breeding places and bi-weekly insecticidal spraying of all native huts within a four mile radius of the breeding grounds.

During the year under review the death rate has been very low. This is ascribed to the fact that the worst areas were selected for our control measures. Rainfall figures show that the precipitation at all stations in the Springbok Flats area was considerably lower than during the 1943–44 season, but that in the eastern Transvaal the rainfall was higher than during the previous year.

Limited tests were carried out in the field and in the laboratory with the insecticidal material D.D.T. and preliminary reports have been submitted. Further investigations regarding the use of D.D.T. in malaria control, and particularly its application from the air by means of aeroplanes, are being carried out.

As in the past years local authorities in the Transvaal malaria areas have done efficient work in malaria control. The inspectorate staff employed by these local authorities is trained at the Department's station at Tzaneen.

Health propaganda was carried out through the showing of the Department's film but as in the past this was confined to the European areas as a projector is not available for use in the rural areas.

Malaria classes were again held during the year under review for both Europeans and Natives. The following is a summary of the classes held:—

Europeans.

Class.	Date.	No. of Persons who Attended.
Tropical Hygiene (Health Inspectors).....	6th–11th Nov., 1944	5
S.A.R. & H. Health Foremen	17th–24th Nov., 1944	15
D.T.M. & H. Class (Doctors)	14th–19th May, 1945.	12

Natives.

Class.	Date.	No. of Persons who Attended.
Native School Teachers (Vaalkop, Potgietersrust).....	25th–30th Sept., 1944	34
Native School Teachers and Nurses (Mphahlele Location, Pietersburg).....	9th–13th Oct., 1944.	80

Natal and Zululand.

The rainfall during the year under review was below the average and, except in the low veld section of Northern Zululand where a heavy fall in February gave rise to a sudden increase in *anopheles gambiae*, the overall breeding of malaria vectors was one of the lowest on record.

The incidence of malaria was correspondingly low during the season and confined to isolated cases in the coastal and inland valley areas of Zululand north of the Umfolosi River.

Notwithstanding the favourable malaria position now obtaining in this province, it is generally admitted by the great majority of the residents in the rural areas under local control by statutory malaria committees, that the introduction of the existing system has been their salvation. It is unfortunate, however, that in isolated cases the infiltration of backward elements has given rise to local dissention. In view of the experience gained it is quite obvious that successful European settlement of malaria areas is wholly dependent on the selection of intelligent and progressive settlers.

The malaria control organisation in this province comprises three independent groups with varying interests but with one and the same objective. These are (1) Local Authorities and Statutory Malaria Committees numbering some 44 on the coast belt with each body having jurisdiction over its own area ; (2) the South African Railways traversing local authority and rural areas but directly responsible for control over the whole system ; (3) the Union Health Department, which assumes executive control over native reserve areas.

The cost of malaria control including inspectorate staff is found by the various Local Authorities, Railways, and Union Health Department respectively. Uniform methods of control are employed in contiguous areas but vary in sections depending on local conditions in regard to breeding of and dwelling infestation by vectors. Thus control measures may vary at the same time during the season from weekly oiling of pools and twice weekly spraying of dwellings to oiling only. The co-ordination of control measures is achieved by officials of the Department attending the monthly meetings of the committees of the local bodies and co-operation through personal contact of the inspectorate staff employed in contiguous areas.

The supervision of control in the native areas and the distribution of all materials used together with the co-ordination of control in contiguous local authority and malaria committee areas has placed a severe strain on the Departmental European inspectorate staff of which one-third (3 out of 9) have been on active service since 1940.

The policy of establishing gum trees as a means of eradicating vector breeding in waterlogged sections in the native areas has unfortunately been held up during the war owing to the shortage of staff in the Native Affairs agricultural section which has been responsible for carrying out this work. It is to be hoped, however, that in the near future this useful and beneficial work may be continued, and that more of the reed and *anopheles gambiae* producing flats will be transformed into flourishing plantations. The trees planted when the scheme was inaugurated some ten years ago are now reaching maturity, and the efficacy of the *eucalyptus saligna* as an ally in the control of malaria has been amply demonstrated over all of the 800 acres established.

The opening up of St. Lucia and False Bay in the low veld malaria area of Zululand will necessitate the introduction of efficient systematic control measures particularly around all camping sites and rest huts. The Zululand Games and Parks Board under whose control this area falls and the local staff employed by them is fortunately very much alive to this necessity, and a continuance of the close co-operation now existing between that body and the Department with regard to essential control measures should reduce the risk of visitors contracting malaria to a minimum.

Close co-operation with this Department by the various units comprising the control organisation in this Province was once more a feature of the work. It is fully realised by all concerned that the low incidence of malaria is due in a large measure to the co-operative spirit of all concerned in this field of preventive medicine.

Extract from Annual Report of Deputy Chief Health Officer, Railways.

The Administration's anti-malaria policy remains as in previous years and progress was again maintained during the season under review. Active anti-malaria measures are now permanently undertaken on the Eastern Transvaal, Natal, Cape Northern and South West Africa Systems.

Seasonal Measures.

(i) *Transvaal.*—The rainfall for the first three months of the season was well below normal and breeding of malaria vectors was consequently less active than during the corresponding period of the previous season. During the months of January, February and March, however, heavy precipitations were experienced which, together with favourable climatic conditions, favoured the breeding of malaria vectors. Additional non-European staff were appointed at Komatipoort, Nelspruit, Pietersburg, Louis Trichardt and Waterval Boven to intensify control measures. That the measures which were adopted were successful can be gauged from the fact that the adult catches during the season under review were appreciably less than the previous season, in spite of the greater rainfall of the season.

(ii) *Natal.*—As a result of the close network of organisations which exist in this Province the same good results were again maintained during the season.

Climatic conditions in Natal were more or less similar to that experienced in Transvaal, i.e., drought conditions prevailed during the early period of the season. In spite, however, of heavy rains in the latter half of the season, the adult catches were exceedingly low, Hluhluwe accounting for the highest figure, which was only 18 for the season.

9. Plague.

The most active focus of plague was in the Qamata Basin on the western border of the Transkeian Territories in native locations in the St. Marks and Glen Grey districts. No human plague has yet occurred east of Qamata Poort but rodent mortality in that direction suggests strongly that rodent plague is well established and gradually spreading through the Transkei. Towards the end of August ten cases of pneumonic plague were contracted in one location in the St. Marks district in the Qamata Basin. Spread took place to a neighbouring location causing five further cases. Prompt action by the Medical Inspector, Umtata, checked further spread. Five anti-plague units, formed from anti-typhus personnel, acting under the direction of Capt. Hermer, S.A.M.C. and a Departmental Plague Inspector, instituted control measures throughout the area. The affected locations were placed under strict quarantine and the inhabitants were immunised with live avirulent anti-plague vaccine. Rodent extermination was carried out in the huts and veld in the affected locations and in others in the vicinity where evidence of rodent mortality was discovered. Later anti-rodent operations were carried out in the remaining locations in the Qamata Basin both in the St. Marks and Glen Grey districts. Each kraal was systematically gassed in an attempt to eradicate the infection wholesale and it was intended to work through the whole of the Glen Grey district to the same end. Practical difficulties in dealing effectively with certain rodent harbourages, such as those afforded by kraal walls, etc., and the fact that two further cases cropped up after the intensive campaign in the St. Marks Location made it necessary to review the position in general and formulate a different line of attack. Between September and May four small outbreaks of bubonic plague occurred in Mbinzana Location, Glen Grey in the Qamata Basin. The outbreaks were on a smaller scale than in previous years and pointed to the effectiveness though not to the perfection of the anti-plague drive. There was a more serious bubonic outbreak in Fransbury Location on the Queenstown border in April. Elsewhere in the Union there were small outbreaks in the Uitenhage district and in the northern Orange Free State in the Vredefort district.

By far the most serious plague epidemic in the history of sylvatic plague in Southern Africa began early in October in Ngamiland, Bechuanaland Protectorate. The first cases were discovered in the Lake Ngami region on the southern

fringe of the Okavango Swamps. In a short while two other centres were discovered to the east, along the Botlelte River, at Makalamabedi and Rakops. The epidemic subsided by the end of November, but sporadic outbreaks continued in the Rakops area until March. In all there were over 350 cases reported of which more than 160 were fatal. The majority were of bubonic plague, with some septicaemic cases. There were a few small pneumonic outbreaks. The epidemic followed a widespread epizootic throughout the whole of the northern Kalahari, first in gerbils (*Tatera spp.*) and then in the secondarily infected semi-domestic multimammate mice (*Mastomys coucha*). A season of well-spaced rains, culminating in a terrific downpour in February, 1944, created optimum food supplies for rodents, and stimulated their increase. There were abnormal quantities of grain stored in the villages which further encouraged increase in multimammate mice. This also served to bring the mice into close contact with the human population which resulted in the widespread plague infections as the mice died out. The Department collaborated with the Bechuanaland Medical Department in carrying out a survey of Ngamiland in December the results of which are the subject of a detailed report by the Ecologist and Chief Rodent Officer. The epizootic was brought about by the recrudescence of infection which had become established in the northern Kalahari between 1930 and 1935. Previous epizootics, for instance in 1934–5, had been as general but had not given rise to human outbreaks; these had, however, been forecast by Dr. L. Fourie who investigated the 1934–5 epizootic.

The Ngamiland survey was followed up by investigations in the southern parts of the Protectorate, in the north-western Cape and northern Transvaal. These showed that there was no concurrent epizootic in these areas. Rodent populations in the north-western Cape and in the southern Kalahari were at peak density in May, 1945, and an epizootic was imminent, and those in the northern Transvaal—as yet an area not subject to rodent plague as far as is known— were healthy and increasing. An outbreak took place at Epukiro near Gobabis in South West Africa in December, 1944. Epukiro lies 250 miles to the South-west of Lake Ngami at the southern end of the Kaukauveld. It thus appears that the plague cycle has developed a rhythm of its own in the northern Kalahari and that future epizootics are likely to be synchronous manifestations of recrudescent infection throughout the area as a whole.

A scheme to replace ' fire-brigade ' tactics in dealing with human and rodent plague in the Union, by regional distribution of an augmented anti-plague staff was under consideration during the year. An analysis of the epidemiology of human plague during the five years 1939–44 showed clearly that human outbreaks occurred with greater frequency and regularity in five areas: three in the northern Orange Free State and two in the eastern Cape Province. These are Heilbron, Kroonstad–Vredefort and Bothaville in the northern Orange Free State and Glen Grey–St. Marks and Uitenhage–Port Elizabeth in the eastern Cape. By giving priority to the organisation and prosecution of anti-plague measures in each of these areas, relatively small in comparison with the total enzootic plague area in the Union, it is hoped that there will be progress towards eliminating human infection. In this connection it is of interest to note that to combat sylvatic plague in Ecuador, Dr. Saenz Vera, carried out a well-organised intensive anti-plague campaign in the province of Chimborazo, in the Andean highlands. He made use of an additional weapon, a hand flame thrower, originally used in Peru, in his campaign, finding it most useful in destroying rats and fleas particularly in stone walls and in the primitive Indian settlements.

Rodent plague continued active in certain parts of the Kopjes area. The plague inspector assigned to the Kopjes area kept in close touch with developments and as in the previous year organised farmers to carry out concentrated drives when evidence of rodent plague was discovered. One outbreak occurred on the fringe of the area worked but none within it. It is to be hoped that the farming community will respond more and more to this line of attack and reinforce rat destruction on an organised basis by further improvements to farm buildings to eliminate structural harbourage. Prophylactic immunisation of persons living on and in the vicinity of farms on which rodent plague had been proved was carried out. The advent of D.D.T. opens up possibilities of even more successful control.

Further experiments on rat poisoning based on the pre-baiting technique devised by British research workers during the war were carried out during the year with satisfactory results. The objection to poisoning on the ground that fleas are liberated falls away with the availability of D.D.T. and as supplies of poisons increase it will be possible to make use of these methods on a much wider scale. The Department is indebted to the Agricultural Research Council of Great Britain and to the Director of the Oxford University Bureau of Animal Population for putting their confidential reports and experience at its disposal.

Rodent flea surveys during the year have been carried out from the western Cape to the Zambezi and Limpopo Rivers and have added very materially to our knowledge. The fleas are housed in the National Flea Collection in the Department of Entomology, South African Institute for Medical Research. With the exception of Natal the rodent flea fauna of South Africa is now fairly well represented, and it will be possible, in the near future to begin the compilation of a monograph in collaboration with the Entomologist, South African Institute for Medical Research.

TABLE 19.—DISTRIBUTION OF HUMAN PLAGUE AMONG THE DISTRICTS OF THE TWO AFFECTED PROVINCES DURING THE YEAR ENDED 30TH JUNE, 1945.

	No. of Out-breaks.	Europeans.		Non-Europeans.		Total.	
		Cases.	Deaths	Cases.	Deaths	Cases.	Deaths.
Cape—							
Glen Grey	5	—	—	16	5	16	5
St. Marks	4	—	—	19	17	19	17
Uitenhage	2	—	—	2	1	2	1
	11	—	—	37	23	37	23
Orange Free State—							
Kroonstad	1	—	—	1	—	1	—
Vredefort	1	—	—	1	1	1	1
	2	—	—	2	1	2	1
UNION	13	—	—	39	24	39	24

Extract from Annual Report of Deputy Chief Health Officer, Railways.

Although no cases of plague were reported from railway property, a few outbreaks occurred near railway stations or road motor transport halts. In every case anti-plague measures were adopted by the Administration's health staff in conjunction with the Union Health Department's anti-rodent staff . . . . .

Co-operation with Private Interests.—The policy of co-operation with the Union Health Department and Local Authorities was continued with advantage.

Frequent inspections were made of the premises of co-operative societies and other private concerns whose premises are situate on or adjacent to railway property and in cases where the stores were found rodent infested, or not properly ratproofed, attention was drawn thereto. It is gratifying to report that many of these private enterprises are now actively engaged in combating rodents on their premises by routine, permanent and temporary measures.

PLAGUE IN ECUADOR.

Chimborazo is a province of Ecuador in the Andean highlands some 3,000 square miles in extent. In 1942 Dr. Saenz Vera more than doubled his field staff and carried out intensive anti-plague campaign over twelve months. He divided the area into three zones each under a zone inspector. Each zone was divided further into sections under the control of a total of 17 section inspectors. The work was directed by a Provincial Inspector. In all 100 labourers were employed. The cost of the operations for the twelve months was borne by the Institute of Inter-American Affairs in Ecuador and amounted to about £10,000.

The conditions of living of the indigenous population appear to be akin to those found in an African community. The native Indians lived in primitive houses and surrounded their villages with rubble stone walls. Most of the dwellings were made of mud and there was abundant rat harbourage.

Besides the usual methods of cyanogassing, poisoning and trapping, wide use was made of hand flame throwers, first used in Peru as an anti-rodent weapon. These had the advantage of being able to scorch out rats from rubble walls and other harbourages not easily or economically accessible to cyanogas. They were also used to flame floors, etc., to kill fleas (a technique long in use in South Africa but with a blowlamp instead of flame thrower) and to set rubbish, etc., alight.

Lessons from the Campaign.—Apart from the use of the flame thrower there was nothing novel in the procedure. The accomplishment in terms of rats destroyed was considerable. The campaign, however, appears to have been done during an inter-epizootic period when plague was not widespread as only one positive finding was recorded from the examination of over 20,000 rats. It remains to see whether the campaign contributed to the eradication of plague infection *per se*.

Such a planned campaign would be conducted with advantage in the hyper-endemic plague area of Glen Grey–St. Marks on the borders of the Transkei and in the Transkei itself—an area in which the Department can expect little co-operation from the local population and which, in view of the menace it is to the Transkei as a whole, needs systematically tackling. The Department already has authority for the employment of four rodent officers and 80 native labourers. A plague inspector is needed to supervise and co-ordinate operations and with these resources it should be possible to make considerable progress towards the elimination of human plague.

10. Sleeping Sickness.

In previous annual reports, attention has been directed to the possibility of sleeping sickness being introduced into the Union from adjoining territories. During recent years cases of sleeping sickness have occurred in the northern part of the Bechuanaland Protectorate and the possibility of the introduction of the disease from that territory has received the attention of the Department. In view, however, of the wide buffer area of relatively unsuitable country between the infected part of Bechuanaland and our north-western borders, it is felt that the possibility of the introduction of the disease by the direct spread of tsetse fly is not great. The greater danger from this quarter is the possibility of the introduction of actual cases of sleeping sickness, which would constitute a serious danger if they entered those areas of Zululand infested with tsetse fly.

The danger of the disease becoming established in this country appears to be greater from Portuguese East Africa. It is well known that tsetse fly existed in the Transvaal prior to the outbreak of rinderpest, some 50 years ago, but that following that outbreak the fly retreated to the north and left the Transvaal entirely. In recent years, however, there has been some evidence that the tsetse fly is again encroaching through Portuguese territory towards the north-eastern corner of the Transvaal. In 1941 a preliminary survey was carried out by officials of this Department and the Division of Veterinary Services in co-operation with representatives of the Southern Rhodesian Government. The survey was referred to in the annual report for the year ended June, 1942. The conclusion was reached that the danger of the Introduction of sleeping sickness into the Union from Portuguese East Africa was not great at present. It was pointed out that the disease in human beings only occurs in the northern part of Portuguese East Africa. It was considered, however, that there was a danger of the tsetse fly encroaching into the northern extremity of the game reserve in the extreme north-eastern Transvaal. If the fly became established in this area it would not only constitute a serious menace to stock but it would only need to be infected by a case or a carrier to initiate spread of the disease. It was accordingly decided that the position needed careful watching and in the winter of 1945 another expedition investigated the matter further. The Union Government was represented by officials from this Department and from the Division of Veterinary Services. Representatives from the Southern Rhodesian Government and from Portuguese East Africa also took part in the survey. This investigation commenced from Pafuri and the object was to survey the Portuguese East African low veld to the south of the area visited in 1941, and in this way to obtain a comprehensive picture of the threat of tsetse fly to the Union.

The general impression gained as a result of the survey and contacts made was that the tsetse fly has established itself on the south bank of the Savé River in Portuguese East Africa from the point where it is joined by the Lundi down its whole length to the sea. At the nearest point this river is about 75 to 100 miles from the northern boundary of the Kruger National Park. No evidence of the fly was found along the border of Southern Rhodesia and Portuguese Territory between Marimbene and Pafuri.

As a result of these two surveys it is considered that there is a threat of the encroachment of tsetse fly towards the Union from the Savé River valley. It is, however, considered necessary that a detailed fly and protozoological survey should be carried out in the low veld of Portuguese East Africa and that this should be coupled with an aerial survey. The party concerned should include an entomologist and an ecologist who would pay particular attention to the flora and fauna of the country in relation to tsetse fly. A survey of this nature would probably take three or four months to complete but it would be of great value to the Union in ascertaining the extent of tsetse fly encroachment and the danger from this source.

11. Smallpox.

The outbreaks of smallpox which were referred to in the last annual report showed a marked extension and assumed a more virulent form during the year. While all the four provinces were affected, the largest number of cases was reported from Natal. A high percentage of the cases developed the haemorrhagic form which proved rapidly fatal. The total number of cases reported was 3,317 with 305 deaths, i.e., a case mortality of 9·2 per cent. as compared with 6·9 per cent. during the year before. The Department has, however, good reason to believe that the case mortality was much higher since deaths amongst natives in rural areas are not generally reported. The total number includes 49 Europeans with 15 deaths.

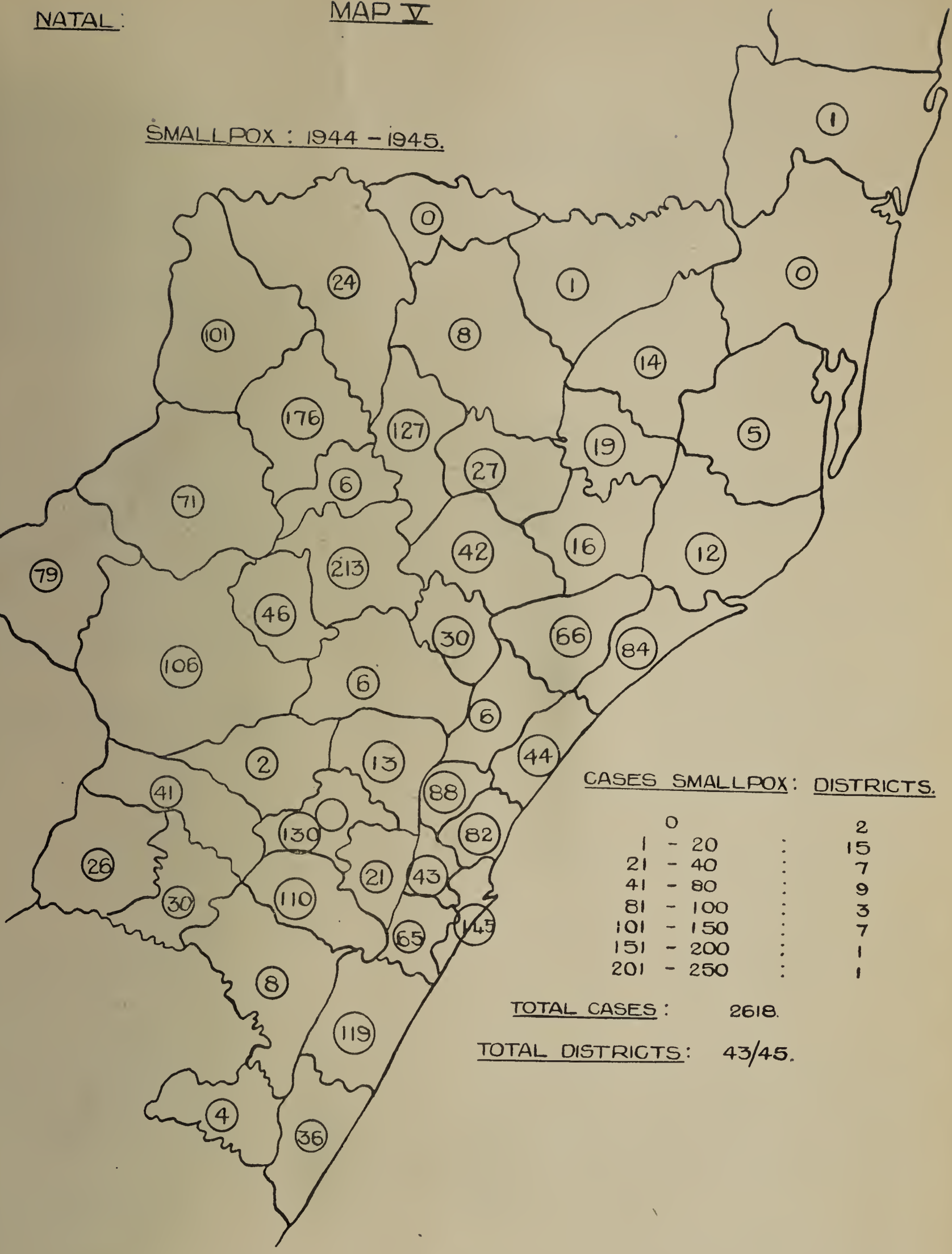
A sharp outbreak occurred in Alexandria Township, just outside Johannesburg. This township has an estimated population of about 65,000 natives and, as all the patients were admitted to the isolation hospital at Rietfontein, it was possible to observe the nature of the outbreak in more detail. During a period of three months as from 1st April, 1945, 193 cases were admitted; 78 were fatal, i.e., a case mortality of 40·4 per cent. The highest incidence was in children under five years of age. This group consisted of 71 children who had never been vaccinated and 35 ended fatally. The next highest incidence occurred in the age group 20 to 30 years where 54 cases were reported, 39 of whom were unvaccinated and 17 died. Of a total of 114 unvaccinated cases 53 died giving a case mortality of 46·5 per cent. Twenty-six patients between the age of 23 and 72 years who had been vaccinated in childhood were admitted and five proved fatal, i.e., 19·2 per cent. From these figures it seems fairly clear that the unvaccinated child constitutes the danger and that where an outbreak does occur all persons who have not been recently successfully vaccinated should be re-vaccinated forthwith.

Extensive mass vaccinations were carried out throughout the Union and the steady decrease in the incidence of the disease is no doubt due to this procedure. In Natal

NATAL:

MAP V

SMALLPOX : 1944 – 1945.

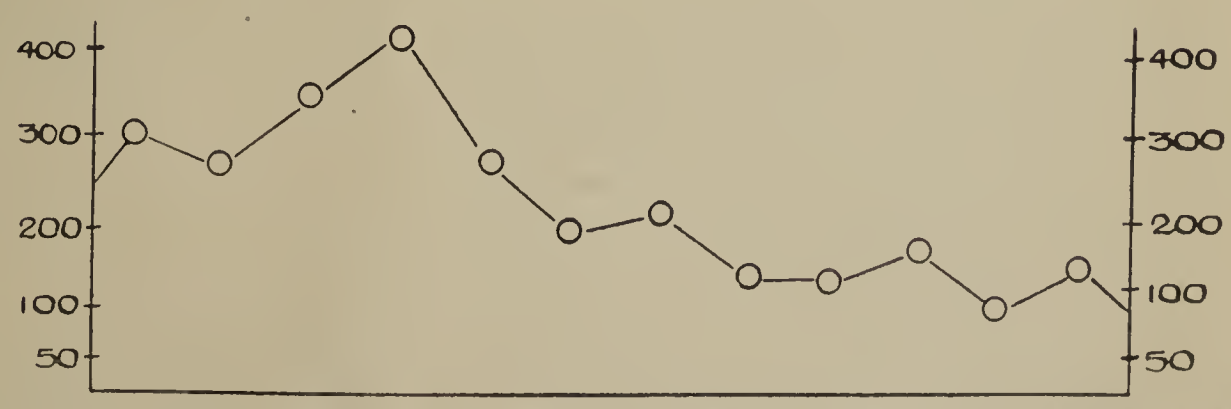


CASES SMALLPOX: DISTRICTS.

0		2
1 – 20	:	15
21 – 40	:	7
41 – 80	:	9
81 – 100	:	3
101 – 150	:	7
151 – 200	:	1
201 – 250	:	1

TOTAL CASES: 2618.

TOTAL DISTRICTS: 43/45.



SMALLPOX : MONTHLY INCIDENCE : 1944 – 1945.

vaccination was made compulsory and wherever practicable lay vaccinators were appointed to carry out vaccination from kraal to kraal. The chief reasons for the high incidence of this disease in Natal are in the case of the Bantu, the wide-spread existence of the Zionist Faith, which combines anti-vaccination with itinerant local preaching, and in the case of the Asiatic, concealment of cases.

In the other provinces, generally speaking, the inhabitants, both European and non-European, appear to appreciate the value of vaccination and attend very well for treatment at the vaccination centres.

The geographical distribution and the monthly incidence of smallpox in Natal is clearly shown in the accompanying map and graph.

12.—Tuberculosis.

Due to the prevailing shortage of trained nurses some 265 beds in the three major Departmental Institutions, namely, Nelspoort Sanatorium, King George V T.B. Hospital and Rietfontein Hospital were necessarily vacant as at the 30th June, 1945, but proposals for the employment of nurse-aides and of native orderlies from the S.A. Medical Corps are now under consideration with a view to relieving the position until such time as trained staff can be secured. Meanwhile the efforts of the Department to ensure that additional accommodation is made available as rapidly as circumstances will permit, are being continued.

The appended tables show the actual beddage available and projected for patients suffering from T.B. in a communicable form.

Table 20.—Existing Accommodation.

	Number of Beds.		
	Europeans.	Non-Europeans.	Total.
A.—In Institutions Established and Maintained by the Department of Public Health—			
King George V T.B. Hospital, Durban	76	53	129
The Sanatorium, Nelspoort.	206	68	274
Rietfontein T.B. Hospital (near Johannesburg)	—	148	148
Rietfontein T.B. Hospital (temporary wards)	—	86	86
Springbok T.B. Hospital (Namaqualand)	—	18	18
	282	373	655
B.—In Institutions Established by the Department of Public Health but Maintained by Other Bodies by Agreement—			
MacVicar T.B. Hospital, Victoria East (maintained by Lovedale Governing Council in conjunction with Victoria Hospital Board)	—	100	100
Rentzkies' Farm Quarantine Station and T.B. Hospital, Cape Town (maintained by Cape Town City Council)	—	174	174
C.—In Institutions Established and Maintained by Local Authorities (Twenty-one Schemes).	175	521	696
D.—In Mission Hospitals (Thirty-six)	8	497	505*
E.—In Schemes Maintained by Other Organisations (Eight).	150	109	259*
Totals	615	1,774	2,389

* Approximate only as such accommodation is not always reserved specially for T.B. cases.

Table 21.—Projected Tuberculosis Schemes.

	Number of Beds.		
	Europeans.	Non-Europeans.	Total.
A.—Departmental Institutions—			
Umtata T.B. Hospital	—	100	100
Mossel Bay T.B. Hospital	10	90	100
	10	190	200
B.—Institutions Established by Department but Maintained by Other Bodies—			
Rentzkies' Farm T.B. Hospital Extensions (maintained by Cape Town City Council)	—	102	102
C. Local Authority Schemes (Ten)	114	408	522
Totals	124	700	824

In addition to the above the City Council of Cape Town has under consideration proposals for the provision of about 500 beds each at Rentzkies Farm (over and above the present accommodation and the 102 beds already projected) and at Durbanville. Details are, however, still awaited.

Besides Springfield Military Hospital which should become available during the coming year proposals involving the conversion of the following military hospitals and camps are now under consideration :—

(1) Kimberley.. West End Military Hospital Advice has, however, recently been received that this hospital is still required by the Department of Defence and is not likely to become surplus to requirements before about the end of 1947.

(2) Matatiele... Native Military Corps Camp, which has now been declared surplus to Defence requirements.

(3) Cape Town. Westlake Military Hospital, which is at present the property of the Imperial Government.

(4) Howick Military Hospital.

At the Departmental institutions research work has continued side by side with routine methods of treatment. At King George V T.B. Hospital, in particular, an interesting line of research is being developed by Dr. Dormer, the medical superintendent in collaboration with the Natal Branch of the S.A. Red Cross Society. In this correction, the folloing is an extract from the Medical Superintendent's report :—

"Dr. Dormer has continued through the last two years with his work on Protein Concentrates and he reached an impasse when, through the Red Cross of South Africa (Natal Branch), he was associated with Colonel Watkins Pitchford, who has altered the whole concept of this subject. Colonel Watkins Pitchford has succeeded in producing protein hydrolysates by enzymic digest of whale meat, formerly a waste product. In contrast with the comparative failure of such material in Belsen and Holland, we have had startling success in the treatment of divers conditions, such as empyema, tuberculosis, microcytic anaemia, poly vitamin deficiency in native children, pellagra, and amoebic hepatitis".

The following tables indicate the number of patients who were admitted to, discharged from, or died in the Departmental institutions other than Springbok T.B. Hospital, where the maximum accommodation amounts to 18 beds only :—

TABLE 22.—KING GEORGE V. HOSPITAL, DURBAN: ADMISSIONS, DISCHARGES AND DEATHS.

RACE.	Patients in Residence at 1/7/44.			Patients Admitted during Year.			Patients Discharged during Year.			Patients Died during Year.			Patients in Residence at 30/6/45.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
European	35	27	62	52	38	90	43	37	80	14	7	21	32	19	51
Coloured	6	3	9	5	8	13	6	6	12	1	—	1	5	5	10
Indian	12	9	21	17	5	22	7	4	11	10	4	14	11	6	17
Native	3	—	3	5	1	6	5	1	6	3	—	3	—	—	—
TOTAL	56	39	95	79	52	131	61	48	109	28	11	39	48	30	78

TABLE 23.—NELSPOORT SANATORIUM: ADMISSIONS, DISCHARGES AND DEATHS.

	Total.	Europeans.			Coloureds.		
		M.	F.	T.	M.	F.	T.
In Sanatorium on 1/7/1944	159	50	43	93	31	35	66
Admitted during year	360	101	97	198	92	72	162
Died during year	15	2	3	5	3	7	10
Discharged during year	342	101	92	193	88	61	149
In Sanatorium on 30/6/1945	162	49	45	94	32	36	68

TABLE 24.—RIETFONTEIN TUBERCULOSIS HOSPITAL: ADMISSIONS, DISCHARGES, DEATHS.

	Europeans.		Coloured.		Natives.		Asiatics.	
	M.	F.	M.	F.	M.	F.	M.	F.
In Hospital, 1/7/1944	—	—	3	3	27	16	—	—
Admitted during year	—	—	4	6	39	25	2	1
Died during year	—	—	2	1	5	6	—	—
Discharged during year	—	—	3	5	35	19	1	1
In Hospital, 30/6/1945	—	—	2	3	26	16	1	—

With the willing assistance of the Director of Census an attempt has this year been made to analyse the incidence (cases and deaths) of certain forms of tuberculosis amongst the various races in age groups, as well as the geographical distribution in each case. The results are shown in the accompanying Tables 25 and 26. The latter also indicates the incidence of cases and of deaths per 100,000 of the population.

The fact that more deaths than cases have been reported in respect of tubercular meningitis is indicative of the incompleteness of returns furnished by medical practitioners. Nevertheless the tables are sufficiently accurate to show that while the incidence of pulmonary tuberculosis and the death rate amongst Natives and Asiatics has assumed serious proportions the position in the case of the Coloured population is even worse.

13. TYPHOID OB ENTEBIC FEVEB.

Typhoid fever is indicative of bad satitation. It is pleasing to note, therefore, that the incidence of this disease, as far as Europeans are concerned, has shown a steady decline. Nevertheless the incidence in South Africa is still far too high, as comparison with other civilized countries, e.g., Great Britain, clearly shows. It is in the larger urban centres where the improvement has chiefly occurred. The smaller towns and the rural areas still lag behind and are mainly responsible for the unsatisfactory position.

Typhoid fever is a disease which is acquired through infected food or drink. The source of the infection is often a "carrier" who passes on the infection through his faeces or urine. This happens in several ways; he may handle food, e.g., milk with his excreta-contaminated hands; he may defaecate or micturate in or in the vicinity of water supplies; or flies, after sitting on infected excremental filth, may contaminate food or drink for human consumption.

In the areas under the jurisdiction of the smaller local authorities, all too little is done to combat this disease. Milk is often produced under unhygienic conditions, and milk handlers are seldom medically examined as a routine measure in order to detect "carriers".

Water supplies are not regularly examined bacteriologically, although this Department to encourage this has made provision for a reduced tariff; and little is done to cope with fly breeding. In this last respect, the almost invariable practice of keeping cattle in the smaller towns, giving rise to gross insanitary nuisances, must be regarded as one of the main reasons for the excessive number of flies found there. The lack of supervision over stables and the haphazard disposal of dung undoubtedly predispose to fly breeding with resultant fly-borne disease. This Department has used all means at its disposal to discourage this insanitary evil, and to urge the provision of communal stables outside the town, for which a small rental could be charged by the local authority. It is regrettable, however, to record that little progress in this respect has been made.

Defective notification probably explains the statistically lower incidence of this disease amongst natives. They often acquire the disease in a milder form than Europeans do, and considerable numbers become ambulant cases. The incidence in respect of non-Europeans does not show an equal progressive decline as in the case of Europeans. Increased urbanization of the native population, with overcrowding in locations, has forced to the front the problem of location sanitation.

The sanitation in these congested human "hives" has not improved *pari passu* with that in European urban areas. Latrine facilities, often of the insanitary communal type, are usually woefully deficient thereby leading to the evils of overfull pails and promiscuous defaecation in the environs. To add to this insanitary state the pail and refuse removal services are too infrequent and inadequate.

As a large percentage of the native population has had typhoid fever resulting in a substantial number of carriers, it is evident that defective sanitation in a location will surely, sooner or later, produce an outbreak of the disease there, especially during the summer months when the fly population is at its height. As natives in their capacity of domestic servants of Europeans are constantly handling foodstuffs the danger of spreading the disease is manifest.

In the rural areas, most natives live under the most primitive conditions. Usually their water-supply is derived from furrows and streams which they share with cattle. Defaecation in the vicinity is a frequent practice, thus leading to contamination of the drinking water. Little, if anything, is done to provide these people with a reasonably pure water-supply or with pit privies. Until employers of native labour in the rural areas become more conscious of their responsibilities in regard to health, the annual crop of cases will inevitably recur.

Lack of timely and efficient action by some of the smaller local authorities often gives rise to unnecessary spread of the disease. Too little effort is made to trace and eliminate the source of the infection and inadequate measures are taken to prevent cases from spreading the disease. While improvement of sanitation must be regarded as the prime

Table 25.—Tuberculosis.

Number of Cases and Deaths in Age Groups Reported during the Year ended 30th June, 1945: By Race and Sex.

	Cases.																							Deaths.																							
	0–9.		10–19.		20–29.		30–39.		40–49.		50–59.		60–69.		70–79.		80–89.		90–99.		100 +.		Total.*			0–9.		10–19.		20–29.		30–39.		40–49.		50–59.		60–69.		70–79.		80–89.		90–99.		100 +.		Total.*		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	T.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	T.
I.—European.																																															
Pulmonary Tuberculosis	24	13	32	53	118	118	119	101	114	29	81	20	64	14	16	5	5	1	1	—	—	—	579	358	937	4	8	4	8	45	29	40	35	42	10	47	11	62	10	12	4	3	1	—	—	—	—	259	116	375
Tuberculosis of the Glands	2	4	—	1	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	7	11	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	1
Tuberculosis of the Bone	15	14	2	—	6	2	4	2	2	2	3	3	4	1	—	—	—	—	—	—	—	—	36	24	60	2	3	—	2	—	1	3	2	2	1	3	—	5	—	—	—	—	—	—	—	—	—	15	9	24
Tuberculosis Peritonitis	—	—	1	2	1	—	—	—	1	—	1	—	—	—	1	—	—	—	—	—	—	—	6	2	7	1	1	—	—	1	—	1	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	5	1	6
Tuberculosis Meningitis	9	6	1	1	1	—	—	1	1	—	—	—	—	—	1	—	—	—	—	—	—	—	13	8	21	19	11	6	4	1	3	1	4	3	—	—	—	—	—	—	—	—	—	—	—	—	—	30	22	52
Total	50	37	36	57	128	122	124	104	117	31	85	23	68	15	18	5	5	1	1	—	—	—	637	399	1,036	26	23	10	14	47	33	45	41	47	11	51	11	67	11	13	4	3	1	—	—	—	—	309	149	458
II.—Native.																																															
Pulmonary Tuberculosis	788	859	620	662	1,269	1,048	1,482	987	1,335	575	611	292	350	213	77	44	10	4	3	1	2	—	6,564	4,703	11,267	271	249	160	194	359	370	427	274	457	157	250	72	122	51	32	10	8	1	2	—	2	—	2,091	1,379	3,470
Tuberculosis of the Glands	81	55	34	17	56	29	43	27	22	12	6	15	3	2	2	—	2	—	—	—	—	—	249	157	406	2	4	—	1	4	4	2	1	1	—	1	—	1	—	—	—	—	—	—	—	—	—	11	10	21
Tuberculosis of the Bone	98	77	60	55	78	39	60	31	71	19	32	15	18	7	2	—	—	1	—	—	—	—	419	245	664	43	33	7	11	46	16	43	14	41	8	15	9	10	2	—	1	1	1	—	—	—	—	206	95	301
Tuberculosis Peritonitis	11	10	1	18	30	14	22	3	8	4	5	6	3	—	—	—	—	—	—	—	—	—	80	55	135	4	4	3	2	12	6	17	3	13	6	4	2	2	—	—	—	—	—	—	—	—	—	55	23	78
Tuberculosis Meningitis	31	19	3	8	16	8	10	2	5	1	4	—	—	—	1	1	—	—	—	—	—	—	70	39	109	33	26	6	3	7	6	11	4	7	—	2	1	1	1	1	—	—	—	—	—	—	—	68	41	109
Total	1,009	1,020	718	760	1,449	1,138	1,617	1,050	1,441	611	658	328	374	222	82	45	12	5	3	1	2	—	7,382	5,199	12,581	353	316	176	211	428	402	500	296	519	171	272	84	136	54	33	11	9	2	2	—	2	—	2,431	1,548	3,979
III.—Asiatic.																																															
Pulmonary Tuberculosis	45	40	81	63	165	78	62	43	39	13	32	9	18	9	6	1	—	—	—	—	—	—	450	256	706	16	26	36	23	73	57	32	29	24	5	11	8	11	3	5	—	—	—	1	—	—	—	209	151	360
Tuberculosis of the Glands	3	3	1	2	2	2	2	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	9	8	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuberculosis of the Bone	4	1	5	2	5	3	—	3	4	1	2	—	—	2	—	—	—	—	—	—	—	—	20	12	32	1	—	—	—	—	—	1	1	—	—	1	—	—	—	—	—	—	—	—	—	—	2	2	4
Tuberculosis Peritonitis	1	1	1	5	2	4	2	—	—	—	2	1	—	—	—	—	—	—	—	—	—	—	8	11	19	1	2	—	1	—	1	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	5	7
Tuberculosis Meningitis	3	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	9	12	2	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	8	11
Total	56	54	88	72	174	87	66	47	44	14	36	10	18	11	6	1	—	—	—	—	—	—	490	296	786	20	36	36	24	74	58	34	30	24	5	11	10	11	3	5	—	—	—	1	—	—	—	216	166	382
IV.—Coloured.																																															
Pulmonary Tuberculosis	242	274	221	336	406	468	331	278	275	129	165	65	100	32	18	7	2	4	1	1	—	—	1,762	1,600	3,362	141	139	92	172	204	242	198	131	177	83	120	46	54	16	22	9	5	2	1	1	1	—	1,015	841	1,856
Tuberculosis of the Glands	12	14	8	5	—	3	2	2	1	1	—	—	—	—	1	—	1	—	—	—	—	—	25	25	50	2	2	—	—	2	—	1	2	—	—	—	1	1	—	—	—	—	—	—	—	—	—	6	5	11
Tuberculosis of the Bone	49	37	13	17	10	8	6	4	2	—	1	1	1	—	—	—	—	—	—	—	—	—	83	67	150	22	31	7	5	1	3	4	5	2	1	2	—	1	1	1	—	—	—	—	—	—	—	40	46	86
Tuberculosis Peritonitis	10	9	2	1	—	3	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	13	14	27	8	6	1	2	2	2	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	13	11	24
Tuberculosis Meningitis	42	46	4	8	—	3	—	1	1	—	—	—	—	1	—	—	—	—	—	—	—	—	48	59	107	94	80	6	14	2	5	4	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	108	100	208
Total	355	380	248	367	416	485	340	285	279	130	166	67	101	33	19	7	3	4	1	1	—	—	1,931	1,765	3,696	267	258	106	193	211	252	209	139	181	85	122	47	56	17	23	9	5	2	1	1	1	—	1,182	1,003	2,185
V.—Total—All Races.																																															
Pulmonary Tuberculosis	1,099	1,186	954	1,114	1,958	1,712	1,994	1,409	1,763	746	889	386	532	268	117	57	17	9	5	2	2	—	9,355	6,917	16,272	432	422	292	397	681	698	697	469	700	255	428	137	249	80	71	23	16	4	4	1	3	—	3,574	2,487	6,061
Tuberculosis of the Glands	98	76	43	25	60	36	47	30	24	13	6	15	3	2	3	—	3	—	—	—	—	—	287	197	484	4	6	—	1	6	4	3	3	1	—	1	1	2	1	—	—	—	—	—	—	—	17	16	33
Tuberculosis of the Bone	166	129	80	74	99	52	70	40	79	22	38	19	23	10	2	—	—	1	—	—	—	—	558	348	906	68	67	14	18	47	20	51	22	45	10	20	10	16	3	1	1	1	1	—	—	—	—	263	152	415
Tuberculosis Peritonitis	22	20	5	26	33	21	25	3	9	4	8	8	3	—	1	—	—	—	—	—	—	—	106	82	188	14	13	4	5	15	9	21	3	13	7	5	3	2	—	1	—	—	—	—	—	—	—	75	40	115
Tuberculosis Meningitis	85	80	8	17	17	11	11	4	6	1	4	—	—	1	2	1	—	—	—	—	—	—	134	115	249	148	125	18	21	11	14	16	9	12	—	2	1	1	1	1	—	—	—	—	—	—	—	209	171	380
Total	1,470	1,491	1,090	1,256	2,167	1,832	2,147	1,486	1,881	786	945	428	561	281	125	58	20	10	5	2	2	—	10,440	7,659	18,099	666	633	328	442	760	745	788	506	771	272	456	152	270	85	74	24	17	5	4	1	3	—	4,138	2,866	7,004

*Includes cases of unspecified age.

DISTRIBUTION OF CASES AND DEATHS—BY RACE.

REPORTED DURING THE YEAR ENDED 30TH JUNE, 1945.

PROVINCE.	Pulmonary Tuberculosis.				Tuberculosis of the Glands.				Tuberculosis of the Bone.				Tuberculosis Peritonitis.				Tuberculosis Meningitis.			
	Number of		Rate per 100,000 of Population.		Number of		Rate per 100,000 of Population.		Number of		Rate per 100,000 of Population.		Number of		Rate per 100,000 of Population.		Number of		Rate per 100,000 of Population.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
I.—EUROPEAN.																				
Cape (excluding Transkei)	475	204	56·59	24·14	4	—	0·47	—	27	14	3·20	1·66	4	4	0·47	0·47	13	38	1·54	4·50
Transkei	3	—			—	—			—	—			—	—			—	—		
Natal	205	66	88·74	28·57	5	—	2·16	—	10	—	4·33	—	—	1	—	0·43	1	—	0·43	—
Transvaal	234	100	22·83	9·76	2	1	0·20	0·10	23	9	2·24	0·88	3	1	0·29	0·10	7	13	0·68	1·27
Orange Free State	20	5	10·05	2·51	—	—	—	—	—	1	—	0·50	—	—	—	—	—	1	—	0·50
TOTAL	937	375	40·74	16·30	11	1	0·48	0·04	60	24	2·61	1·04	7	6	0·30	0·26	21	52	0·91	2·26
II.—NATIVE.																				
Cape (excluding Transkei)	3,016	1,021	233·60	45·64	36	5	5·03	0·22	86	47	8·21	2·07	21	16	1·10	0·71	29	55	1·32	2·43
Transkei	2,276	13			78	—			100	—			4	—			1	—		
Natal	2,708	1,161	152·28	65·29	167	1	9·39	0·06	245	23	13·78	1·29	51	7	2·87	0·39	35	7	1·97	0·39
Transvaal	3,000	1,162	101·29	39·23	119	15	4·02	0·51	220	219	7·43	7·39	57	55	1·92	1·86	43	46	1·45	1·55
Orange Free State	267	113	42·63	18·08	6	—	0·96	—	13	12	2·08	1·92	2	—	0·32	—	1	1	0·16	0·16
TOTAL	11,267	3,470	147·66	45·48	406	21	5·32	0·28	664	301	8·70	3·94	135	78	1·77	1·02	109	109	1·43	1·43
III.—ASIATIC.																				
Cape (excluding Transkei)	43	21	357·72	178·86	—	—	—	—	—	1	—	8·13	—	1	—	8·13	1	3	8·13	24·39
Transkei	1	1			—	—			—	—			—	—			—	—		
Natal	633	312	306·69	151·16	17	—	8·24	—	32	2	15·50	0·97	16	3	7·75	1·45	8	5	3·88	2·42
Transvaal	29	26	95·08	85·25	—	—	—	—	—	1	—	3·28	3	3	9·84	9·84	3	3	9·84	9·84
Orange Free State	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL	706	360	283·31	144·46	17	—	6·82	—	32	4	12·84	1·61	19	7	7·62	2·81	12	11	4·81	4·45
IV.—COLOURED.																				
Cape (excluding Transkei)	3,037	1,682	386·90	213·40	44	11	5·57	1·39	138	71	17·73	8·99	25	23	3·17	2·91	99	200	12·54	25·33
Transkei	18	3			—	—			2	—			—	—			—	—		
Natal	138	50	633·03	229·36	2	—	9·17	—	4	2	18·35	9·17	2	—	9·17	—	6	3	27·52	13·76
Transvaal	158	116	264·66	194·30	4	—	6·70	—	6	13	10·05	21·81	—	1	—	1·68	2	5	3·35	8·39
Orange Free State	11	5	62·15	28·25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL	3,362	1,856	379·50	208·82	50	11	5·62	1·24	150	86	16·88	9·68	27	24	3·04	2·70	107	208	12·05	23·40
V.—TOTAL (ALL RACES)																				
Cape (excluding Transkei)	6,571	2,928	226·70	75·28	84	16	4·14	0·41	251	133	9·00	3·40	50	44	1·41	1·12	142	296	3·66	7·57
Transkei	2,298	17			78	—			102	—			4	—			1	—		
Natal	3,684	1,589	164·65	71·02	191	1	8·56	0·04	291	27	13·01	1·21	69	11	3·08	0·49	50	15	2·23	0·67
Transvaal	3,421	1,404	83·91	34·44	125	16	3·07	0·39	249	242	6·11	5·94	63	60	1·54	1·47	55	67	1·35	1·64
Orange Free State	298	123	35·41	14·62	6	—	0·72	—	13	13	1·54	1·52	2	—	0·24	—	1	2	0·12	0·24
TOTAL	16,272	6,061	147·01	54·76	484	33	4·37	0·30	906	4·5	8·19	3·75	188	115	1·70	1·04	249	380	2·25	3·43

means of preventing this disease, immunisation is a potent means of controlling an outbreak or threatened outbreak, and prompt use should be made of this weapon. This will not only limit the spread, but will also reduce the "carrier" rate, by reducing the number of cases in the community. In an effort to overcome ineffective action, this Department pursues local authorities with a follow-up questionnaire whenever it appears that cases are not being adequately dealt with or insufficient steps have been taken to trace and eliminate the source of infection. This serves the purpose of bringing apathetic local authorities to a realization of what should be done both in regard to existing as well as any future cases.

It is to be hoped that these local authorities who have headed the appended Table No. 28 will make the good resolution for the future that instead of appearing at the top of the list they will appear at the bottom or, better still, not appear in it at all.

Table 27.—Typhoid or Enteric Fever.

Distribution of Cases and Deaths.

By Race and Area—Reported during the Year ended 30th June, 1945.

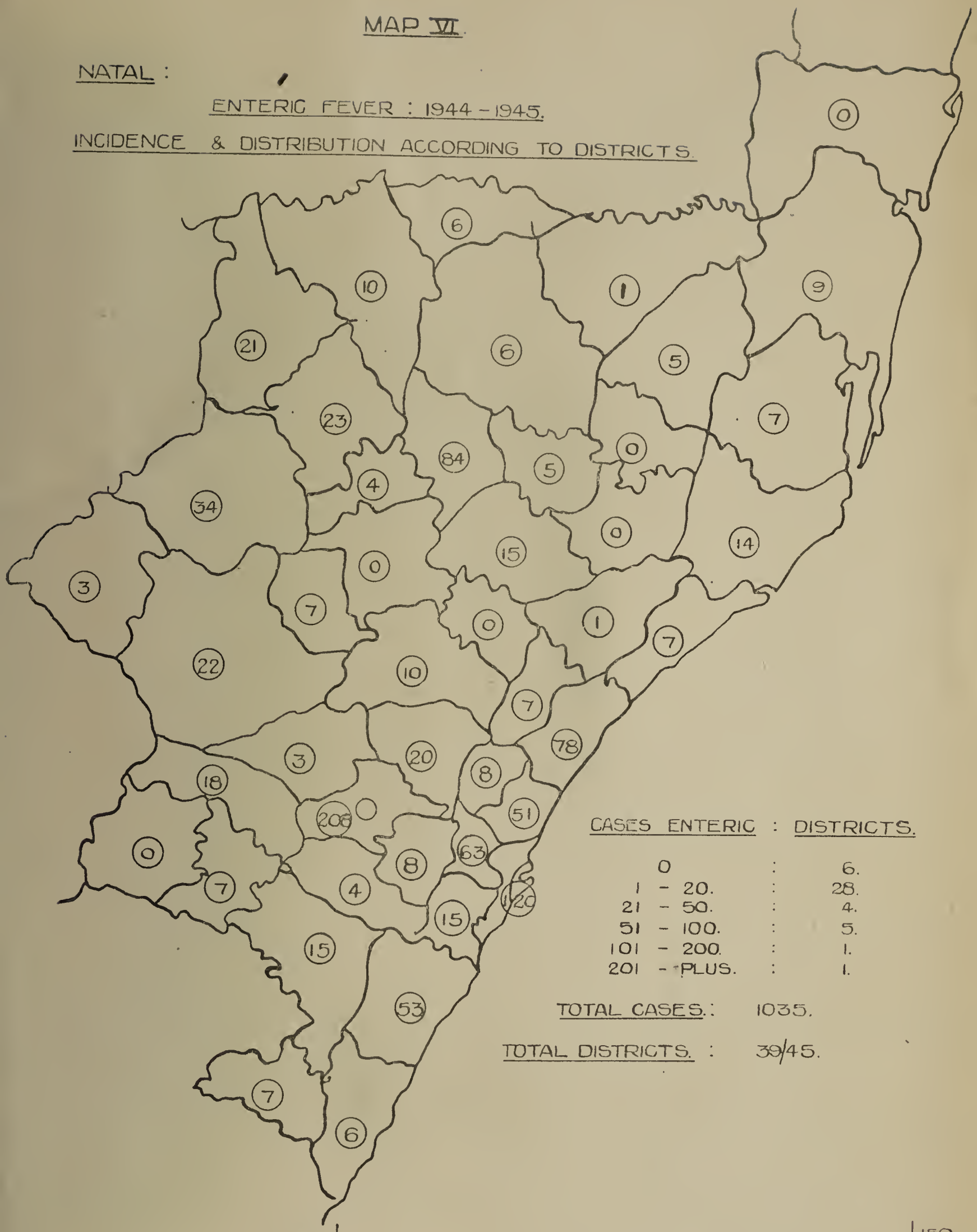
Province.	Cases.				Deaths.			
	Urban.	Rural.	Total.	Incidence Rate per 100,000 of Population.	Urban.	Rural.	Total.	Death Rate per 100,000 of Population.
I.—European.								
Cape (excluding Transkei)	124	77	201	24·37	14	—	14	1·66
Transkei	5	—	5		—	—	—	
Natal	66	30	96	41·56	7	2	9	3·90
Transvaal	207	84	291	28·39	12	7	19	1·85
Orange Free State	63	14	77	38·69	2	3	5	2·51
Total	465	205	670	29·13	35	12	47	2·04
II.—Native.								
Cape (excluding Transkei)	210	164	374	18·54	45	6	51	2·38
Transkei	42	4	46		—	3	3	
Natal	227	412	639	35·93	69	82	151	8·49
Transvaal	489	235	724	24·44	151	27	178	6·01
Orange Free State	142	140	282	45·13	11	15	26	4·16
Total	1,110	955	2,065	27·06	276	133	409	5·36
III.—Asiatic.								
Cape (ex Transkei)	4	—	4	32·52	—	—	—	—
Transkei	—	—	—		—	—	—	
Natal	96	94	190	92·05	15	1	16	7·75
Transvaal	11	1	12	39·34	2	—	2	6·56
Orange Free State	—	—	—	—	—	—	—	—
Total	111	95	206	82·66	17	1	18	7·22
IV.—Coloured.								
Cape (excluding Transkei)	251	235	486	62·18	45	11	56	7·09
Transkei	5	—	5		—	—	—	
Natal	19	5	24	110·09	2	2	4	18·35
Transvaal	9	3	12	20·10	2	—	2	3·35
Orange Free State	2	—	2	11·30	—	—	—	—
Total	286	243	529	59·52	49	13	62	6·98
V.—Total (All Races).								
Cape (excluding Transkei)	589	476	1,065	28·65	104	17	121	3·17
Transkei	52	4	56		—	3	3	
Natal	408	541	949	42·41	93	87	180	8·04
Transvaal	716	323	1,039	25·48	167	34	201	4·93
Orange Free State	207	154	361	42·89	13	18	31	3·68
Total	1,972	1,498	3,470	31·35	377	159	536	4·84

MAP VI.

NATAL :

ENTERIC FEVER : 1944 – 1945.

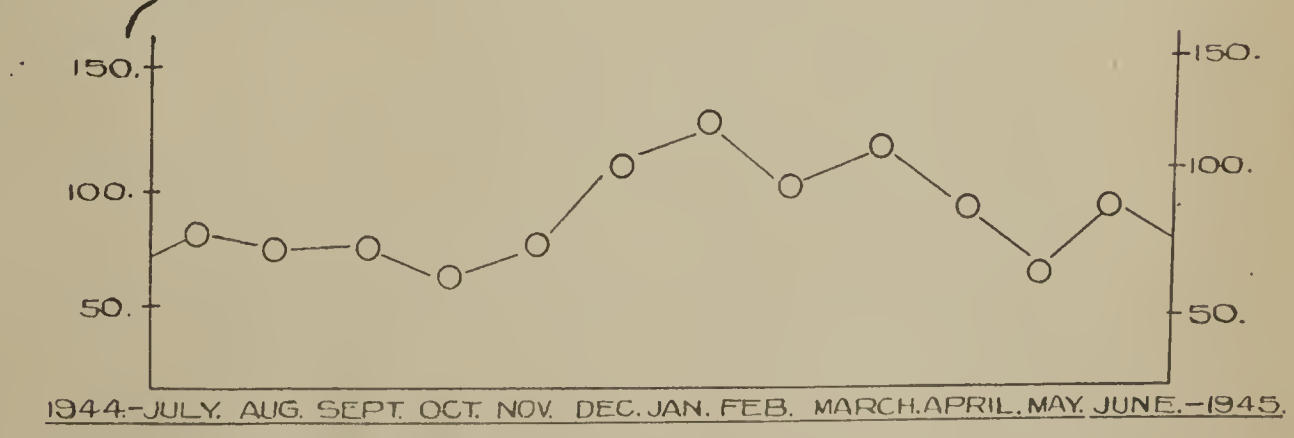
INCIDENCE & DISTRIBUTION ACCORDING TO DISTRICTS.



CASES ENTERIC	:	DISTRICTS.
0	:	6.
1 – 20.	:	28.
21 – 50.	:	4.
51 – 100.	:	5.
101 – 200.	:	1.
201 – PLUS.	:	1.

TOTAL CASES. : 1035.

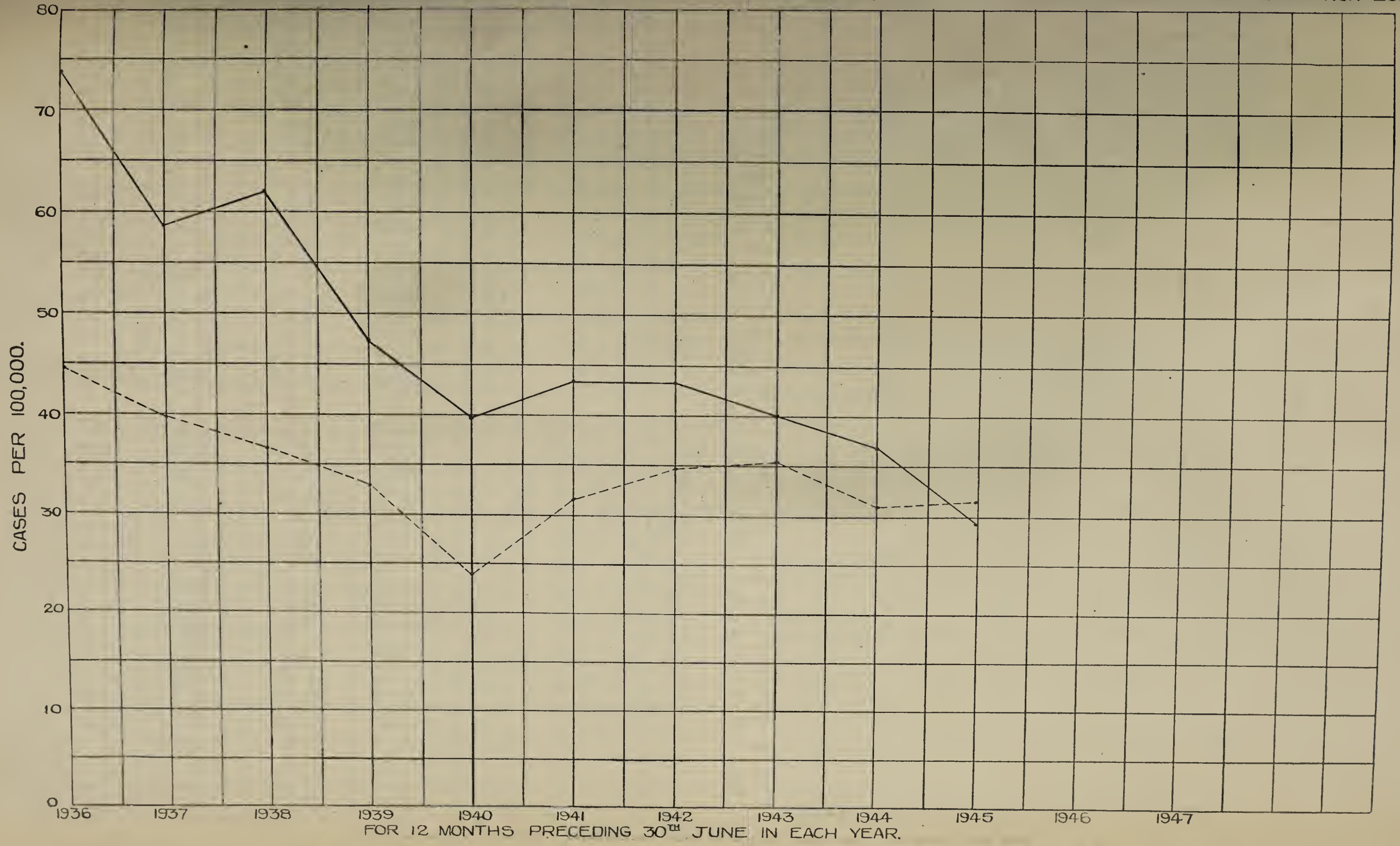
TOTAL DISTRICTS. : 39/45.



ENTERIC FEVER: MONTHLY INCIDENCE : 1944 – 1945.

GRAPH III

GRAPH OF TYPHOID FEVER INCIDENCE PER 100,000 OF THE POPULATION, IN RESPECT OF NOTIFIED CASES : EUROPEANS NON-EURP.



GRAPH II.

TYPHUS CONTROL : TRANSKEIAN TERRITORIES : CASES & DEATHS REPORTED JULY 1944 - JUNE 1945.

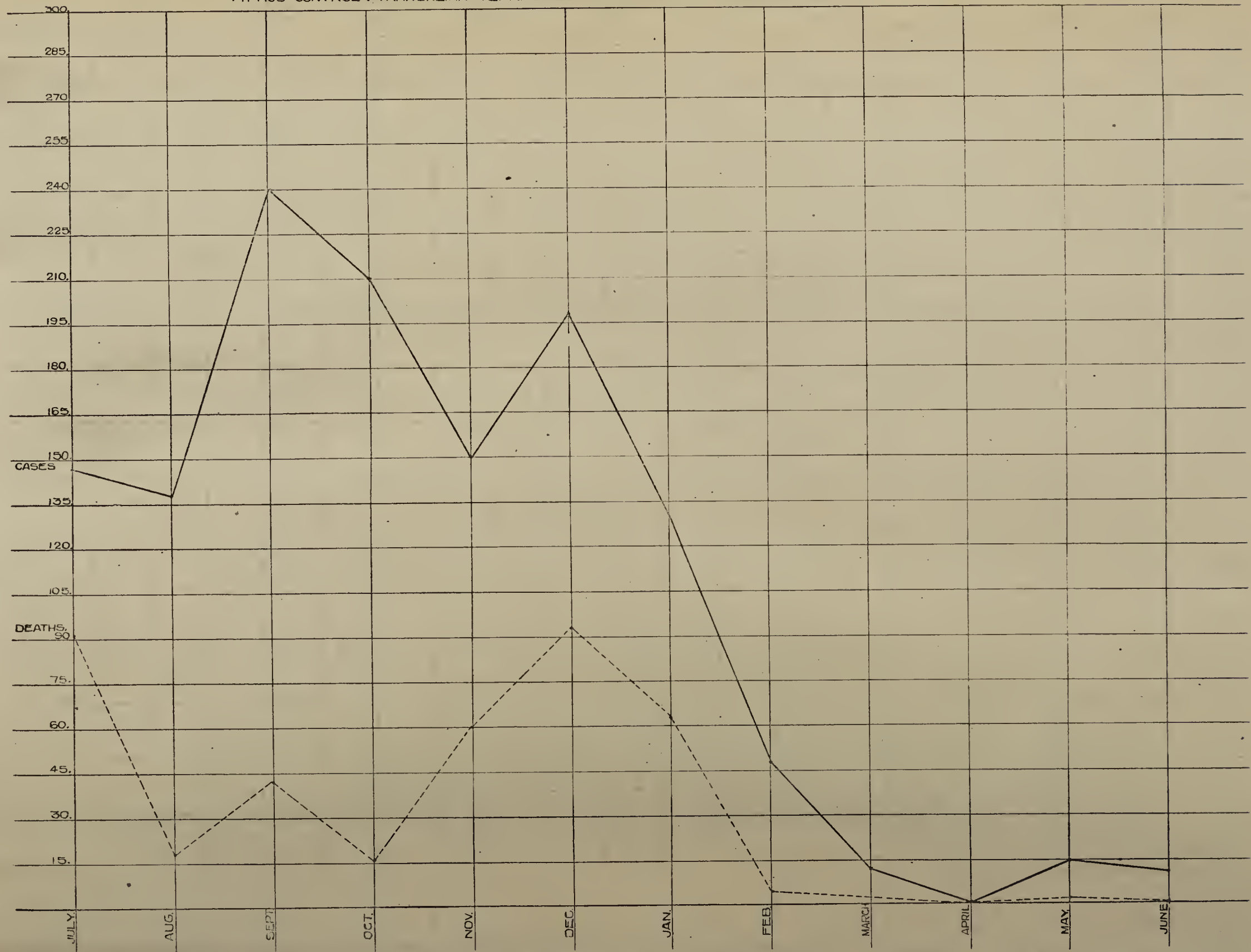


TABLE 28.—TYPHOID OR ENTERIC FEVER: NOTIFICATIONS AND INCIDENCE IN URBAN LOCAL AUTHORITY AREAS IN WHICH TEN OR MORE CASES WERE NOTIFIED DURING THE YEAR ENDED 30TH JUNE, 1945 (EXCLUDING CASES RETURNED AS "IMPORTED").

LOCAL AUTHORITY.	Notifications.					Incidence Rate per 1,000 of Population.				
	European.	Native.	Asiatic.	Coloured.	Total.	European.	Native.	Asiatic.	Coloured.	Total.
Bethal Municipality	—	23	—	—	23	—	16·36	—	—	6·46
Aberdeen Municipality	—	5	—	15	20	—	8·25	—	15·46	6·34
Alexandra Health Committee	—	91	—	1	92	—	5·71	—	1·24	5·71
Morreesburg Municipality	1	2	—	8	11	0·70	54·48	—	9·67	4·75
Kroonstad Municipality	23	41	—	—	64	3·90	5·50	—	—	4·59
Heilbron Municipality	2	15	—	—	17	1·31	7·58	—	—	4·26
Harrismith Municipality	3	30	—	—	33	0·89	5·05	—	—	3·49
Cradock Municipality	7	21	—	5	33	1·76	5·88	—	2·56	3·46
Queenstown Municipality	4	42	2	5	53	0·51	4·35	29·87	2·77	2·73
Beaufort West Municipality	3	6	—	11	20	0·83	6·32	—	3·19	2·49
Newcastle Municipality	1	5	4	2	12	0·50	2·24	5·67	19·80	2·43
Vrede Municipality	4	6	—	—	10	2·34	2·36	—	—	2·33
Uitenhage Municipality	8	24	1	12	45	0·85	3·64	4·44	2·77	2·19
Fort Beaufort Municipality	—	8	—	3	11	—	2·24	—	3·18	1·82
Umtata Municipality	2	4	—	4	10	0·84	1·48	—	8·33	1·80
Paarl Municipality	7	1	—	23	31	0·72	2·11	—	2·49	1·59
Aliwal North Municipality	5	6	—	1	12	1·99	1·52	—	0·90	1·58
Middelburg (Tvl.) Municipality	6	3	1	—	10	1·75	1·20	4·67	—	1·58
Vereeniging Municipality	8	27	1	—	36	0·88	2·01	2·54	—	1·55
Hercules Municipality	10	17	—	—	27	1·41	1·71	—	—	1·53
Oudtshoorn Municipality	9	—	—	12	21	1·12	—	—	1·87	1·42
Ladysmith (Natal) Municipality	2	6	1	6	15	0·27	1·45	0·61	21·46	1·11
Pietermaritzburg Municipality	9	20	14	1	44	0·32	1·39	1·59	0·43	0·82
Benoni Municipality	8	54	—	—	62	0·33	1·00	—	—	0·79
Germiston Municipality	17	42	—	—	59	0·52	1·04	—	—	0·79
Kimberley Municipality	2	20	—	3	25	0·13	1·41	—	0·34	0·63
East London Municipality	13	12	—	1	26	0·57	0·58	—	0·28	0·54
Durban Municipality	24	71	33	5	133	0·23	1·12	0·41	0·67	0·52
Cape Town Municipality	27	23	—	97	147	0·17	1·76	—	0·76	0·49
Springs Municipality	10	35	—	—	45	0·44	0·52	—	—	0·49
Boksburg Municipality	1	13	2	1	17	0·06	0·40	2·65	0·95	0·33
Johannesburg Municipality	59	81	4	4	148	0·21	0·42	0·40	0·19	0·29
Pretoria Municipality	28	11	1	—	40	0·28	0·32	0·36	—	0·29
Bloemfontein Municipality	5	5	—	—	10	0·19	0·19	—	—	0·18
Port Elizabeth Municipality	4	9	—	3	16	0·08	0·35	—	0·14	0·16
Local Health Commission (Natal)	2	64	30	1	97	*	*	*	*	*

* Not available.

In Natal the incidence of typhoid fever was considerably higher than it was last year. As indicated in the attached map the disease was widespread throughout the Province. The majority of the cases from the Pietermaritzburg district came from the Edendale area. As indicated in the accompanying graph the month when the greatest number of cases occurred was January, when 128 cases were recorded in the Province.

14. TYPHUS OR RICKETTSIOSIS.

A great improvement is to be recorded for the current year in the smaller number of cases and deaths notified. As compared with the totals of 5,623 cases and 2,600 deaths for the previous year there have been 2,909 cases and 566 deaths recorded during this year. As is usual far the greatest number of cases were in the Transkei and Ciskei. The incidence in these territories was, however, much lower than last year. The accompanying graph shows clearly how the number of cases in the Transkei rapidly decreased from the beginning of 1945.

The lowered incidence in these areas may be partly attributable to the immunity conferred upon large sections of the native population as a result of the widespread outbreak last year. The typhus antigen field test, which gives a positive result on the sixth day of the disease, has also been of value in facilitating diagnosis and thereby timeous preventive measures. Intensive deverminisation and immunisation were carried out in these territories throughout the year.

It is difficult to assess the degree to which typhus vaccine helped in combating the Transkeian outbreak owing to the irregular attendance of the natives in regard to their second and third injections. By the time the "one shot" method was in use, the epidemic was on the wane.

In view of the fact that immunisation requires to be repeated at fairly frequent intervals, about every 6 to 12 months, to maintain even a reasonable degree of immunity, it would obviously entail the employment of a very considerable field staff if this were the sole measure of protection of the population. The most important use of typhus vaccine is, therefore, in the protection of anti-typhus field staff and secondly in the control of limited outbreaks.

The introduction of D.D.T. is both timely and welcome as adding another potend weapon to the armoury employed against this disease. The use of D.D.T. will obviate the necessity for cumbersome deverminising apparatus, and the attendant difficulty of transporting it from district to district.

In the Transvaal and the Orange Free State there were 190 cases with 20 deaths and 66 cases with 7 deaths, respectively. Several outbreaks occurred on the highveld of the eastern Transvaal, notably in the Volksrust, Amersfoort and Middelburg districts. In the Orange Free State, where the lowest incidence occurred, there was an outbreak at Trompsburg.

In Natal there were 180 cases and 11 deaths. The bulk of the cases occurred during the first half of the year under review, and the highest incidence was borne by the border districsts of this Province. No cases were reported from Zululand.

It cannot be too frequently stressed that typhus can only be permanently controlled by removing the causes which lie behind the epidemics. The disease is associated with malnutrition, squalor, and dirt which provide the ideal environment for the louse vector of the disease. It thus follows that the practical steps necessary for the eradication of the disease amongst the non-European population, which bears the main brunt, are the provision of hygienic homes, equipped with adequate ablution and sanitary facilities, and the improvement of the economic status of the people. While some progressive urban local authorities are aware of the necessity for providing their non-European inhabitants with the essentials requisite to living healthy lives, it is regrettable that many others still do not measure up to their responsibilities. Consequently they still present the depressing picture of non-Europeans living in dreary, over-crowded insanitary hovels, deficient in light, ventilation, water and sanitary facilities. In

the rural areas the non-European exists in a state of primitive insanitation which does not provide him with the facilities whereby he can attain to even the rudimentary standards of civilized life. The hope for the future lies in the widening realization of the need for improving the conditions of life from the health point of view of the underprivileged sections of the community.

Table 29.—Typhus Fever.

Cases and Deaths Reported during the Year ended 30th June, 1945—By Race and Provinces.

Province.	Number of Districts in which Outbreaks occurred.	European.		Native.		Asiatics.		Coloured.		Total—All Races.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape (excluding Transkei)...	32	69	6	1,053	110	1	—	48	—	1,171	116
Transkei.....	19	16	—	1,282	410	2	—	2	2	1,302	412
Natal.....	11	17	1	159	10	4	—	—	—	180	11
Transvaal.....	17	9	1	181	19	—	—	—	—	190	20
Orange Free State.....	8	2	—	52	7	—	—	12	—	66	7
Union.....	87	113	8	2,747	556	7	—	62	2	2,909	566

15. Venereal Disease.

The past year has witnessed the termination of the war in Europe, and with it this country, like all other belligerent countries, will be faced with many vexed social problems of which venereal disease, from an epidemiological viewpoint, is a most important one. During the period of demobilisation and the transition from war to peace thousands will again be on the move and there will be the inevitable reaction from the tensions of war. It can be expected that these conditions will tend to favour the spread of venereal diseases.

The control of both syphilis and gonorrhoea at the present time is a problem which presents a challenge to every country. This battle for control cannot be won by drugs alone as cure of the patient is not sufficient. The problem is primarily a moral one, the medical part being subsidiary. In order to combat the evil it is necessary and vital to solve the problem of sexual promiscuity, and to this purpose the co-operation of all forces must be enlisted. It is usually accepted that in the spread of venereal disease prostitution plays a very prominent part, that no prostitute can escape infection for very long and once contaminated she becomes an active disseminator of the disease. Prostitution is not regulated nor is soliciting permitted in this country. The evil, however, undoubtedly flourishes underground and constitutes a serious reservoir of infection in the cities, towns and peri-urban areas. Among the native population, particularly in the rural areas, a danger which is perhaps even greater is the large number of promiscuous women, many of whom are infected with venereal disease. This group probably accounts for the majority of the infections in native males. While it is difficult to determine the causes of prostitution and promiscuity it is even more difficult to estimate its extent and whether this is increasing or not. It would appear that the causes are deeply embedded in our whole social structure and are complex. If these evils could be eliminated venereal disease would practically disappear. To achieve success in this direction public opinion must be organised to support all essential measures including the repression of prostitution, the promotion of healthy family life, improved living conditions, the provision of recreational facilities, intensified propaganda, improved case finding and early, effective and adequate treatment.

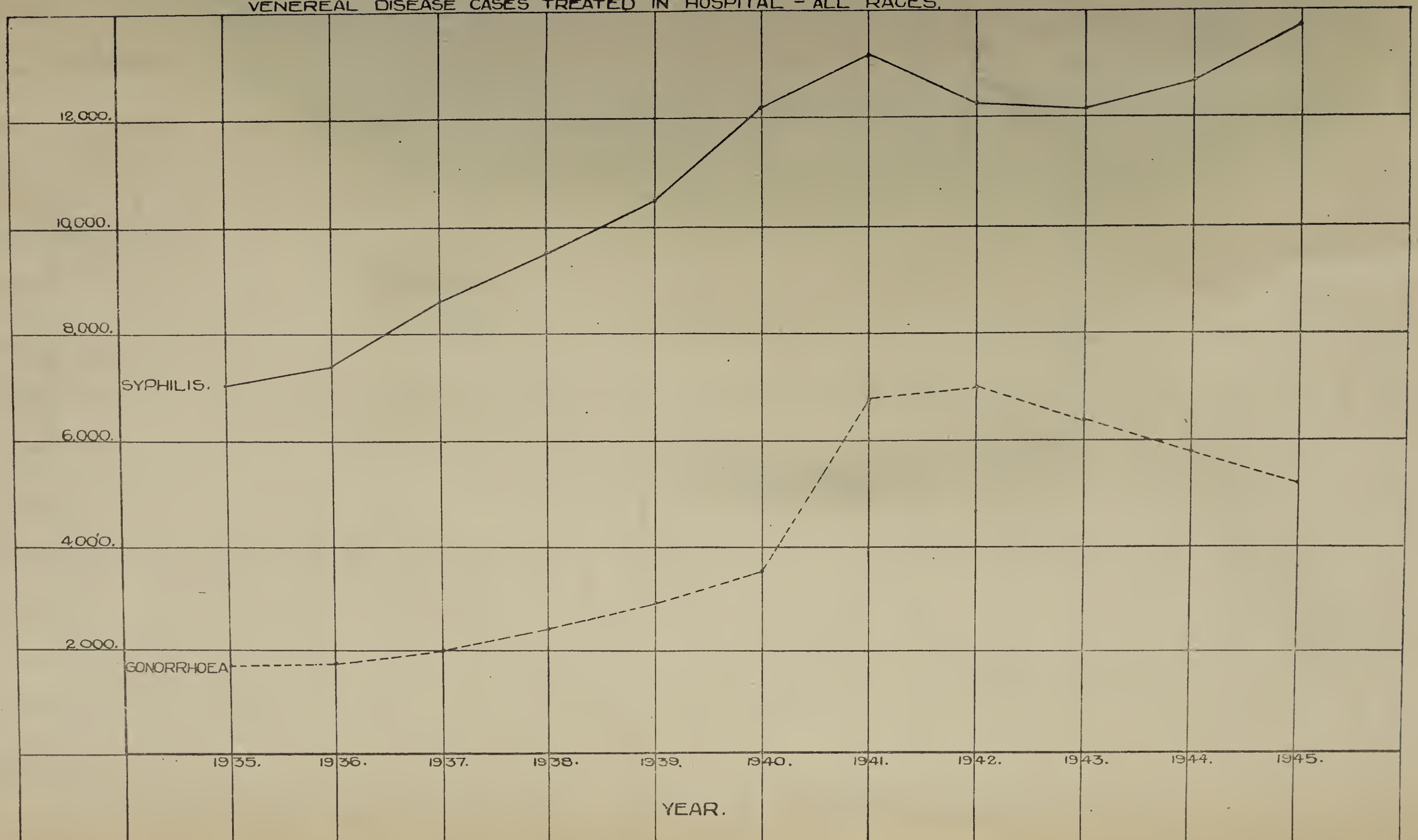
Another great difficulty experienced in this country is the tracing of contacts. While this is often difficult in Europeans, it is infinitely more so in natives as only a negligible number of the latter who acquire a venereal disease are able or willing to divulge useful information regarding the identity of the contacts. It will thus be appreciated that this is a problem of great magnitude which can only be solved with the co-operation and goodwill of the large native population. A further serious obstacle to effective control is the difficulty experienced in holding patients to a sufficient amount of treatment. This has been, and still is, a major problem in this country, as with the majority of patients, particularly natives, regular attendance is only assured until such time as the outward manifestations have disappeared. The reasons for this attitude can partly be explained by the inconvenience of prolonged treatment and partly by the fact that many of the patients have to travel long distances, frequently on foot, to reach the treatment centres.

It is gratifying to record that both Europeans and natives are becoming increasingly aware of the venereal disease problem. In Europeans the harmful and unhealthy atmosphere of fear and mystery, which has hitherto prevailed in regard to these diseases, is being dispelled. In natives, among the many difficulties hitherto encountered, superstitution and indifference to the ravages of these diseases proved a formidable barrier, and the problem that had to be faced was how to attract them to the venereal disease hospitals, urban and rural clinics and rural treatment centres. This has been accomplished by the extension of facilities, by making the whole procedure for treatment as easy as possible for the patients and by propaganda work. These measures have brought about so radical a change in their attitude towards venereal diseases that they now realise how vitally these diseases are related to their progress and welfare.

The aim of the veneral disease scheme in this country is to make adequate treatment available to all persons and especially to natives, to render sufferers non-contagious as rapidly as posfible and furthermore to prevent the development of the crippling manifestations. As an indication of the Department's resolve in dealing with this matter a study of the records over the last eleven years is of interest. In spite of difficulties considerable progress has been made during the year under review, and it was found possible to erect another venereal disease hospital, the selected centre being Lydenburg, a district which harbours a large and widespread native population who, for the greater part, reside in inaccessible localities. Although hospitalisation of venereal disease patients may be regarded as a costly procedure, it nevertheless assures effective and adequate treatment. Treatment centres for natives in the rural areas have been materially increased in number, and where these were in the past visited fortnightly by district surgeons weekly visits are now the rule. Surveys by district surgeons, to investigate the alleged high incidence of venereal disease in many districts, were expeditiously carried out on a large scale. Local authorities have been encouraged and assisted in the erection of venereal disease clinics in those places where it was considered suitable for the local authorities to undertake this work. An additional whole-time district surgeon was appointed to the staff of the Pretoria office. His time will mainly be devoted to the existing clinics and additional ones which are soon to be established. As it was found impossible in the past to compute a reliable default rate in the treatment, consideration was given to the provision of suitable record cards for use by district surgeons, and these will shortly be supplied. An increasing amount of assistance was given to mission hospitals and other organisations undertaking the treatment of venereal diseases. Propaganda work amongst the natives was intensified and steps are being taken to extend this essential work. Planning for the future is being considered, and it is hoped that further material improvements will be effected, including improved laboratory facilities.

GRAPH V.

VENEREAL DISEASE CASES TREATED IN HOSPITAL - ALL RACES.



GRAPH VI.

SYPHILIS AND GONORRHOEA.

NUMBER OF OUTDOOR ATTENDANCES AT CLINICS & TREATMENT CENTRES. 1935 - 1945. ALL RACES.

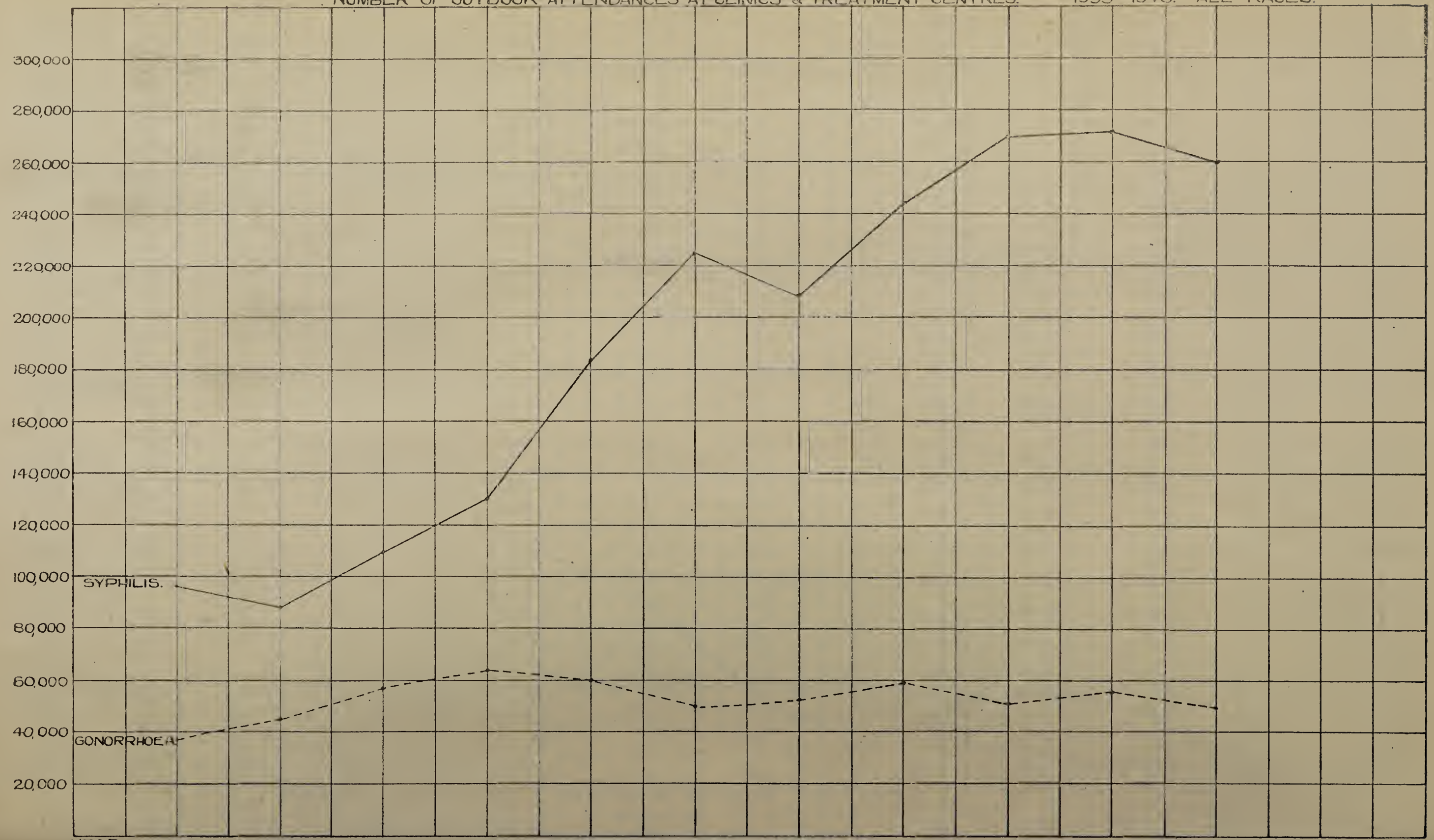


TABLE 32.—VENEREAL DISEASES, CASES TREATED AND ATTENDANCES, YEAR ENDED 30TH JUNE, 1945.

LOCALITY.	CASES TREATED IN HOSPITAL.						ATTENDANCES AT CLINICS AND TREATMENT CENTRES.					
	Syphilis.		Gonorrhoea and Other Venereal Diseases.		Total.		Syphilis.		Gonorrhoea and Other Venereal Diseases.		Total.	
	E.	N-E.	E.	N-E.	E.	N-E.	E.	N-E.	E.	N-E.	E.	N-E.
By Government and Local Authority Medical Officers.												
Alexandra	—	—	—	—	—	—	—	5,684	—	4	—	5,688
Adelaide	—	—	—	—	—	—	—	266	—	—	—	266
Aliwal North	—	—	—	—	—	—	—	676	—	—	—	676
Barberton	—	863	—	—	—	863	—	—	—	—	—	—
Beaufort West	—	—	—	—	—	—	—	169	—	—	—	169
Benoni	—	—	—	—	—	—	196	4,775	14	3	210	4,778
Bethlehem	—	47	—	13	—	60	—	517	—	20	—	537
Bethulie	—	15	—	2	—	17	—	25	—	—	—	25
Bloemfontein	1	238	4	42	5	280	590	8,435	—	—	590	8,435
Bochem	—	754	—	8	—	762	—	836	—	—	—	836
Boksburg	—	—	—	—	—	—	243	5,623	2	27	245	5,650
Brakpan	—	—	—	—	—	—	66	3,911	—	46	66	3,957
Cape Town	32	181	47	91	79	272	7,641	51,933	4,345	12,185	11,986	64,118
Cape Divisional Council	—	—	—	—	—	—	461	6,718	14	291	475	7,009
*Darling	—	—	—	—	—	—	—	—	—	—	—	—
De Aar	—	—	—	—	—	—	—	549	—	14	—	563
Durban	—	—	—	—	—	—	—	25,052	—	15,521	—	40,573
Durban (Addington)	57	—	88	—	145	—	5,367	—	1,611	—	6,978	—
East London	—	—	—	—	—	—	353	13,169	66	178	419	13,347
Elim	—	436	—	20	—	456	—	—	—	—	—	—
Ficksburg	—	—	—	—	—	—	—	624	—	—	—	624
*Fraserburg	—	—	—	—	—	—	—	—	—	—	—	—
Germiston	—	—	—	—	—	—	1,069	4,995	932	97	2,001	5,092
*Gordons Bay	—	—	—	—	—	—	—	—	—	—	—	—
Hanover	—	—	—	—	—	—	—	463	—	5	—	468
Heilbron	—	—	—	—	—	—	—	—	—	—	—	—
Hercules	—	—	—	—	—	—	—	8,103	—	111	—	8,214
*Jansenville	—	—	—	—	—	—	—	—	—	—	—	—
*Johannesburg	—	—	—	—	—	—	—	—	—	—	—	—
Kenhardt	—	—	—	—	—	—	—	15	—	—	—	15
Kimberley	—	62	—	48	—	110	218	14,949	68	1,122	286	16,071
King Edward VIII (Durban)	—	3,413	—	1,525	—	4,938	—	—	—	—	—	—
Kingwilliamstown	—	146	—	15	—	161	—	591	—	—	—	591
Kokstad	—	—	—	—	—	—	—	1,609	—	—	—	1,609
Kroonstad	—	581	—	1	—	582	—	603	—	1	—	604
Krugersdorp	—	—	—	—	—	—	—	2,757	—	19	—	2,776
Kuruman	—	50	—	—	—	50	—	669	—	—	—	669
Lichtenburg	—	—	—	—	—	—	—	—	—	—	—	—
*Molteno	—	—	—	—	—	—	—	—	—	—	—	—
Mossel Bay	—	—	—	—	—	—	132	439	50	51	182	490
*Nelspruit	—	—	—	—	—	—	—	—	—	—	—	—
*Newcastle	—	—	—	—	—	—	—	—	—	—	—	—
*Olifantshoek	—	—	—	—	—	—	—	—	—	—	—	—
Oudtshoorn	—	—	—	—	—	—	1,990	5,588	—	—	1,990	5,588
Paarl	—	—	—	—	—	—	13	272	—	—	13	272
Paarl Divisional Council	—	—	—	—	—	—	—	779	—	—	—	779
Pietermaritzburg	—	1,054	—	461	—	1,515	—	—	—	—	—	—
Pietersburg	—	—	—	—	—	—	—	1,025	—	—	—	1,025
Piet Retief	—	87	—	40	—	127	—	69	—	16	—	85
Port Elizabeth	—	—	—	—	—	—	1,788	17,078	481	1,445	2,269	18,523
*Port Shepstone	—	—	—	—	—	—	—	—	—	—	—	—
Potchefstroom	—	—	—	—	—	—	—	972	—	—	—	972
Pretoria	—	—	—	—	—	—	3,451	21,849	1,663	3,436	5,114	25,285
*Randfontein	—	—	—	—	—	—	—	—	—	—	—	—
Rietfontein	30	4,900	49	2,718	79	7,618	—	—	—	—	—	—
Rustenburg	—	—	—	—	—	—	—	2,726	—	17	—	2,743
Sekukuniland	—	102	—	4	—	106	—	76	—	—	—	76
*Senekal	—	—	—	—	—	—	—	—	—	—	—	—
Springs	—	—	—	—	—	—	447	11,049	119	547	566	11,596
*Stanger	—	—	—	—	—	—	—	—	—	—	—	—
Standerton	—	—	—	—	—	—	—	109	—	—	—	109
Stellenbosch	—	—	—	—	—	—	26	1,249	—	—	26	1,249
Stellenbosch Div. Coun.	—	—	—	—	—	—	—	221	—	—	—	221
*Sterkstroom	—	—	—	—	—	—	—	—	—	—	—	—
Steynsburg	—	—	—	—	—	—	—	1,068	—	—	—	1,068
Swellendam	—	18	—	—	—	18	—	—	—	—	—	—
Tulbagh	—	—	—	—	—	—	—	82	—	—	—	82
Uitenhage	—	38	—	—	—	38	—	2,197	—	16	—	2,213
Umtata	—	—	—	—	—	—	—	93	—	—	—	93
Vereeniging	—	—	—	—	—	—	141	6,429	22	342	163	6,771
Vryburg	—	140	—	1	—	141	—	—	—	—	—	—
Wellington	—	—	—	—	—	—	—	—	—	—	—	—
Winburg	—	—	—	—	—	—	—	220	—	—	—	220
Zeerust	—	—	—	—	—	—	—	397	—	—	—	397
TOTAL	120	13,125	188	4,989	308	18,114	24,192	238,703	9,387	35,514	33,579	274,217

* No returns submitted.

Encouraging reports of increased non-European attendanees and enthusiasm have been reeeived during the year from all parts of this eountry. In the Transvaal, the natives of the Pretoria and Pietersburg districts eontinue to display great interest in the funetioning of the existing venereal disease elinies whieh are eonducted by the whole-time district surgeons on polyelinic lines. Additional clinies have been established or are under eonsideration in these districts. In several distriets of the Eastern and Western Transvaal eonsiderable progress is being made in the eradication of venereal diseases and attendances at the treatment centres have increased materially. In the Transkei the numerous venereal disease elinics under the Department's supervision continue to render exeellent serviees and the native population are eager to avail themselves of the faeilities offered to them. From the Free State, Natal and Cape Provinees an inereasing demand for more treatment centres in the rural areas was a noteworthy feature. In all these instances facilities for treatment were authorised with good results. These outstanding evidenees of progress promise well for the future, and there is little doubt that the benefits which these clinies and treatment centres bestow on the native population will be broadeast, as only natives ean, throughout the length and breadth of this country.

As venereal diseases are not notifiable in this country no true ineidence rate ean be published; nor is it possible to state with eertainty whether there was a material inerease or deerease in the prevalence. The figures published in this report very evidently bear no accurate relation to the actual prevalence of these diseases, but they are significant as indieating progress towards their eradication. A glanee at the accompanying graph and tables clearly indicates the marked inerease in the attendanees at the outdoor treatment eentres and elinics and admissions to the venereal disease hospitals during the 11-year period 1935 to 1945. While the number of Europeans treated in hospitals for syphilis and gonorrhoea decreased during this period, the number of non-Europeans increased materially. At the outdoor elinies and treatment centres the European attendanees increased in the case of syphilis but deereased eonsiderably for gonorrhoea. The non-European attendances, however, for both syphilis and gonorrhoea reveal a remarkable increase. Compared with the previous year the past year reveals a material inerease in the European attendances at the outdoor treatment eentres for both syphilis and gonorrhoea, but the number treated in hospital shows a relatively small inerease in the case of gonorrhoea only. In the non-European population the outdoor attendances and the number treated in hospitals inereased slightly in the case of syphilis but decreased materially in the case of gonorrhoea. It must be appreciated that the information given is entirely based on the figures at the Department's disposal. These figures are not complete as some of the loeal authorities do not submit their returns before this report goes to press.

In the realm of treatment there is at the present time a divergence of opinion as to the best methods to be employed. Standardisation of the treatment is reeeiving the attention of the Department, and it is hoped to give effect to this measure in the near future. Close study has been given to the more intensive treatment of syphilis as is being done in Ameriea and Britain. Intensive therapy is at the present time being carried out in several of the larger centres in the Union, but some time must elapse before the results ean be finally assessed. The most dramatic and eontinued advance in the methods of treating both syphilis and gonorrhoea through the use of penieillin augurs well for the future. If further experienee eonfirms the early results, penieillin will, indeed, be a powerful weapon and will undoubtedly be made available for hospitalised and possibly for outdoor patients.

A word of warning must be sounded however. With these new and improved methods of treatment there is a danger that both the public and the medieal profession may be lulled into complacency. There is an urgent need for the mobilisation of all forces in support of all phases of the social hygiene problem, and only sustained publie education will make it possible to achieve success in the eradication and control of venereal diseases.

TABLE 30.—VENEREAL DISEASES: OUTDOOR ATTENDANCES AT CLINICS AND TREATMENT CENTRES DURING EACH OF THE YEARS 1935 TO 1945.

	Syphilis.		Gonorrhoea.	
	European.	Non-European.	European.	Non-European.
1935	17,828	72,256	20,851	16,500
1936	17,539	62,783	21,815	19,789
1937	23,174	78,948	29,066	25,814
1938	24,681	97,963	34,018	27,086
1939	27,938	145,167	32,402	24,789
1940	33,955	177,848	20,777	29,088
1941	29,988	166,623	9,719	37,519
1942	31,966	198,004	13,076	38,731
1943	33,672	223,242	12,598	30,269
1944	22,088	237,751	7,337	41,617
1945	24,192	238,703	9,387	35,514

TABLE 31.—VENEREAL DISEASES: CASES TREATED IN HOSPITAL DURING EACH YEAR 1935 TO 1945.

	Syphilis.		Gonorrhoea.	
	European.	Non-European.	European.	Non-European.
1935	185	6,819	400	1,250
1936	187	7,216	368	1,376
1937	252	8,342	422	1,597
1938	255	9,210	492	1,939
1939	248	10,331	311	2,546
1940	228	12,020	228	3,211
1941	249	12,951	325	6,525
1942	274	11,998	440	6,488
1943	307	11,855	421	6,068
1944	119	12,550	119	5,812
1945	120	13,125	188	4,989

16. YELLOW FEVER.

The inoculation of persons leaving the Union by air continues. Formerly the vaccine used was that supplied by the Rockefeller Foundation, but during the year under review the produetion of yellow fever vaccine has been commenced at the Department's laboratory at Rietfontein. The inoculations are carried out at several centres in different parts of the country.

Precautionary measures have been carried out regularly at the various sanitary aerodromes to prevent the introduction of yellow fever into the Union. No eases of yellow fever, or of suspected yellow fever, have been brought to the notiee of the Department. The infeetion is, however, now known to exist within a few hundred miles of our northern borders. The Department is, therefore, taking steps to aseertain morc accurately the distribution and prevalence of the mosquito veetor, *aedes aegypti*, in the Union and also the southern limit of infeetion in humans or in apes. The inereasing liklihood of the introduction of yellow fever undoubtedly constitutes a potential danger to the Union and the investigations referred to are of the utmost importance.

VI.—GENERAL.

1. HOUSING.

The National Housing and Planning Commission was established by Act No. 49 of 1944—section 10 of which substituted a new section in plaee of seetion 18 of the Housing Act No. 35 of 1920.

This new section established the Commission as a corporate body capable of performing all sueh aets as bodies eorporate may by law perform and the section further provided that any reference in any law to the Central Housing Board should be construed as a reference to the Commission.

The Commission consists of a Chairman, a Director and nine other members (although Act No. 49 of 1944 only provided for ten members in all, the number was increased to eleven by a provision in the Housing Emergency Powers Act No. 45 of 1945).

The Commission is given power *inter alia* to erect dwellings, to enter into contracts relating thereto, to grant loans to local authorities, individuals and defined companies, to purchase and allocate building materials, to establish a building research branch, to establish a regional planning branch, to co-operate with any Townships Board, generally to enquire into matters pertaining to urban and rural housing and to advise and assist the Minister or any Administrator in carrying out the provisions of the Housing Act. Its powers are thus very much wider than those of the former Central Housing Board whose functions were confined to enquiry into housing conditions, reporting thereon, advising and assisting local authorities in the preparation of schemes and advising and assisting generally the Minister and Administrators in the carrying out of the provisions of the Housing Act.

The Commission assumed office on the 1st August, 1944, and amongst its activities for the period ending 30th June, 1945, may be mentioned the following :—

(*a*) Effecting a settlement by mutual agreement of the ratio of losses to be shared in National Housing Schemes between the Government and Local Authorities as well as the new formula of charges to be permitted against such schemes.

(*b*) The consideration of Regional Planning arising out of a report by the Van Eck Committee.

(*c*) Discussions with representatives of rural housing with a view to submission to the Minister of Finance of a scheme involving the subsidisation of the building of houses in rural areas.

(*d*) Collaboration with the Building Controller for the purpose of up-to-date advice being always available in regard to the position of building materials in the Union.

(*e*) Negotiations with representatives of Building Societies with a view to the revival of the operation of the Additional Housing Act, No. 41 of 1937, under new conditions.

(*f*) Survey of housing requirements in the areas of all local authorities by a questionnaire addressed to such local authorities calling for information in regard to existing houses, their extent of disrepair and slum conditions and the number of houses required to meet immediate shortage.

(*g*) The determination of policy in regard to—

(1) extent to which economic loans should be granted in relation to the value of the building to be erected ;

(2) the refusal of loans for schemes in which the houses are to be confined to occupation by particular employees of any individual industry or employer ;

(3) the effect of the Fixed Property Profits Tax on the price of land ;

(4) one local authority taking the place of another local authority where the latter refuses to sponsor an approved housing scheme.

The principal functions of the Commission as already referred to are to erect and direct the erection of National Houses throughout the Union.

In so far as the erection of houses by the Commission is concerned a number of problems faced it from its inception, including—

(*a*) the provision of the necessary staff ;

(*b*) the absence of legislative power to enable the Commission to acquire land expeditiously and at reasonable prices.

(*c*) the restriction of building costs to a figure reasonably comparable with the increased cost of living ;

(*d*) the necessary labour to be made available to meet any building programme which aimed at the construction of a given number of National Houses within a given period.

To deal with these problems the Housing (Emergency Powers) Act of 1945 was passed.

Much of the time of the Commission during the period January to June last, was given to assisting and co-operating in obtaining the passage through Parliament of this Act which might be regarded as the Commission's Charter.

The Act provides enabling powers by regulation and it is the operations of the Commission under these regulations which will prove whether the new legislation has conferred all powers necessary to enable an expeditious building programme to be carried out by the Commission itself and its progress in this regard during the coming year will indicate how far such emergency legislation has been justified.

It should be mentioned that the term "National Housing" embraces the following categories :—

Firstly.—Sub-economic : That is, where schemes are put forward by local authorities for letting purposes where the rent charged will not cover expenditure and where the loss sustained on an approved scheme is borne by the Government and local authorities, in certain proportions. The local authority is always responsible for repayment of the loan.

Secondly.—Dwellings or schemes constructed by local authorities from money advanced by the Commission or by an Administrator at the economic rate of interest of 4 per cent. either for letting purposes or for the purpose of enabling an individual to erect a house on his own ground. In all these cases the local authority sponsoring the application is responsible for repayment of the loan.

Thirdly.—National Houses to be built by the National Housing and Planning Commission for letting purposes with the right of conversion into ownership after a certain period.

Fourthly.—Housing for aged poor and totally unfit under which money is loaned at the nominal rate of 1s. per cent up to 100 per cent. of the cost of a scheme.

In regard to the first class of National Housing, money is advanced at $3\frac{1}{4}$ per cent. with a 40 year redemption period. It is a letting scheme in which local authorities are permitted to make certain charges which are scheduled and which in the total do not exceed 10 per cent. of the capital cost.

Such portion of the 10 per cent. not recovered by the rent charged is then borne by the Government and the local authority as a loss in the following porportions :—

(*a*) Where the rent charged represents 5 per cent. or less the loss is borne in the proportion of 3 to 1, i.e., the Government $\frac{3}{4}$ and the local authority $\frac{1}{4}$.

(*b*) Where rent charged represents over 5 per cent. and up to and including 6 per cent., in the proportion of 5 to 2.

(*c*) Where the rent charged represents more than 6 per cent., in the proportion of 2 to 1.

In regard to the second class of National Housing, i.e. economic loans for letting or individual ownership : very few local authorities have in the past taken advantage of the scheme in regard to building houses for letting but in regard to loans to individuals for erecting their own houses this scheme is becoming very popular in all Provinces and in all municipalities, large and small.

It is the function of the Commission to settle the proportions of the loan to be granted in relation to the value of house and ground. This was settled by the Commission in January last when the following was adopted :—

(*a*) The limit of the amount to be advanced in scheduled areas to be £2,000 and in non-scheduled areas £1,800.

(*b*) The proportion of an individual housing loan to the cost of dwelling in scheduled areas to be as follows :—

Up to £600—100 % (excluding value of land).
£601 to £1,500— 95 % (including value of land).
£1,501 to £1,750— 90 % (including value of land).
£1,751 to £2,000— 85 % (including value of land).

(*c*) The proportion of an individual housing loan to the cost of dwelling in non-scheduled areas to be :—

Up to £600—100 % (excluding value of land).
£601 to £1,300— 95 % (including value of land).
£1,301 to £1,550— 90 % (including value of land).
£1,551 to £1,800— 85 % (including value of land).

The period of repayment of these loans which for many years had been fixed at 20 years has now been extended to 30 years.

In regard to the third type of National Housing, that is houses built by the Commission, this scheme has been largely engendered by the powers authorised by the Housing (Emergency Powers) Act of 1945. These houses will be built as an emergency measure and it is not intended that the Commission should take over the responsibility of local authorities for building houses. The Commission's programme will be a temporary expediency, on the completion of which the work of the Commission will largely be concentrated on assisting and encouraging local authorities to carry on their building programmes.

In regard to the fourth category—housing for the aged poor and totally unfit—not much has so far been done, though this scheme will probably develop more extensively in the future.

The policy of the Commission is to co-operate in every possible way with local authorities and assist them with technical advice and recommended plans to the fullest extent. It is on this co-operation that a long term policy of house construction to meet the requirements of all parts of the Union must be based and on which the ultimate achievement of that policy will rest.

In Table 33 will be found a return of loans approved, and issued, and of houses completed, under construction or approved but not yet commenced, from the period 16th August, 1920, to 30th June, 1945.

A perusal of the figures under (C) will indicate the progress made since the inception of the Commission in August, 1944, in respect of sub-economic schemes as apart from economic loans included under (A).

the period 25th October, 1944, to 30th June, 1945, gives some idea of the extent of the Board's area of jurisdiction, the population affected and the praiseworthy *modus operandi* of the Board in dealing with some of the practical difficulties with which it is faced :—

" The area of jurisdiction of the Board covers approximately nine thousand square miles, excluding the existing municipalities of Pretoria and of the whole Witwatersrand from east to west and of the others in the adjacent districts.

It includes at the present time the whole or portion of the eighteen magisterial districts listed below :—

The whole of—	And part of—
Benoni.	Bethal.
Boksburg.	Brits.
Germiston.	Bronkhorstspruit.
Johannesburg.	Heidelberg, Tvl.
Krugersdorp.	Middelburg, Tvl.
Roodepoort-Maraisburg.	Nigel.
Springs.	Potchefstroom.
Vereeniging.	Pretoria.
	Rustenburg (Thabazimbi).
	Witbank.

There is a likelihood that in due course expansion by the incorporation of other areas will take place and it is possible that in time the whole of the Transvaal, excluding existing urban local authorities will be included.

TABLE 33.—HOUSING ACT NO. 35 OF 1920 : WORKING FROM PROMULGATION, 16TH AUGUST, 1920, TO 30TH JUNE, 1945.

PROVINCE.	Loan Applications Approved.			Loan Issues.	Number of Houses.					
	European.	Non-European.	Total.		Complete.	Under Construction.	Approved, but not yet Commenced.	Total.	Total for European Occupation.	Total for Non-European Occupation.
(A) *Economic Housing*—										
Cape	2,210,367	706,703	2,917,070	2,636,630	8,125	101	310	8,536	3,341	5,195
Natal	659,536	276,269	935,805	734,845	1,244	3	230	1,477	612	865
Orange Free State	759,373	20,618	779,991	754,000	1,899	356	348	2,603	963	1,640
Transvaal	2,964,171	293,412	3,257,583	3,186,485	5,839	98	164	6,101	3,596	2,505
TOTAL	6,593,447	1,297,002	7,890,449	7,311,960*	17,107	558	1,052	18,717	8,512	10,205
(B) *Sub-Economic Housing*—										
Cape	1,558,933	6,693,255	8,252,188	5,017,035	13,907	1,857	5,453	21,217	2,806	18,411
Natal	23,324	1,633,344	1,656,668	1,244,442	1,508	174	2,406	4,088	20	4,068
Orange Free State	145,044	103,675	248,719	37,687	285	77	80	442	133	309
Transvaal	1,584,045	5,194,345	6,778,390	3,861,508	9,955	1,027	7,224	18,206	1,882	16,324
TOTAL	3,311,346	13,624,619	16,935,965	10,160,672	25,655	3,135	15,163	43,953	4,841	39,112
(C) *National Housing*—										
Cape	22,033	1,019,574	1,041,607	29,246	43	321	1,398	1,762	32	1,730
Natal	738,310	441,114	1,179,424	—	—	—	71	71	55	16
Orange Free State	—	—	—	—	—	—	—	—	—	—
Transvaal	1,410,367	238,340	1,648,707	9,026	2	38	939	979	715	264
TOTAL	2,170,710	1,699,028	3,869,738	38,272	45	359	2,408	2,812	802	2,010
(D) *Housing of Aged Poor*—										
Cape	48,249	22,311	70,560	47,124	288	44	42	374	172	202
Natal	25,000	—	25,000	25,000	50	—	—	50	50	—
Orange Free State	43,375	—	43,375	42,325	76	—	1	77	77	—
Transvaal	69,800	1,000	70,800	33,100	17	6	25	48	38	10
TOTAL	186,424	23,311	209,735	147,549	431	50	68	549	337	212
TOTAL : (A), (B) (C) AND (D)..	12,261,927	16,643,960	28,905,887	17,658,453	43,238	4,102	18,691	66,031	14,492	51,539

* Includes £2,937,334 reissued out of repaid capital.

2. RURAL AND PERI-URBAN SANITARY CONDITIONS.

In the year under review only two new local authorities were created under the provisions of provincial legislation, namely, the Health Committee of Bulwer in Natal and the Committee of Management of Estoire near Bloemfontein in the Orange Free State but an appreciable number of areas were brought under local government control through the extension of existing municipal boundaries, particularly in the Transvaal.

In the Transvaal, too, an important advance was made in extending control when the area of jurisdiction of the newly-constituted Peri-Urban Areas Health Board was prescribed in terms of Administrator's Proclamation No. 120 of 1944 in October, 1944. The following extract from the report of the Board's Medical Officer of Health for

The boundary line, by cutting through districts, has given rise to certain difficulties especially in regard to the notification and check on notifiable diseases which are a major responsibility of the Board.

It is difficult to know without direct reference to suitable district maps (which have been very difficult to obtain, and which are certainly not in the possession of medical practitioners who have to notify the diseases) whether any given case is the responsibility of the Peri-Urban Areas Health Board or not within the ten districts only partly included by its boundaries.

The handling of these cases brook of no delay and consequently I have recommended that responsibility be accepted without undue dilatoriness and that an error, if any, be adjusted afterwards. Only on this basis has

it been possible to cope with the numerous notifications over a widely scattered area made to my department which was established at a time when the poliomyelitis incidence in 1944 was at its peak and when virulent smallpox was widespread and increasing.

The inspection of trade premises by Peri-Urban Inspectors on behalf of the Rural Licensing Boards in each district is also complicated by our boundary dividing several districts.

Uniformity throughout each district is desirable and the Licensing Boards have been assisted as far as possible in connection with the inspection of premises just outside our area but within the same magisterial district.

However, this inconvenience of different boundaries is probably outweighed as far as the Board is concerned in that the responsibility and expense of infectious disease in the areas very remote from truly peri-urban areas is not imposed upon it.

The population within the Board's area cannot be accurately assessed but there is no doubt that during the war years there has been a tremendous increase not only in the towns, but also around them, especially along the Reef and at Pretoria, Vereeniging and Witbank.

Natives particularly, and their families, have flocked nearer to the industrial towns, attracted by the demand for labour and the increased wages.

The figures for the 1936 Census (the latest) for the 18 districts within the Peri-Urban Areas Health Board area after deducting the populations within the municipalities are worked out to be about 140,400 Europeans and 541,800 non-Europeans. Making a further adjustment for the portions of the ten abovementioned districts not within the area, I estimate that there was then a total of about 362,000 including 80,000 Europeans and 283,000 non-Europeans in this area.

Remember that was in 1936—nearly ten years ago. Now with the natural increase and the abnormal influx the figure is probably over 750,000. The 1946 Census will help considerably in arriving at a more accurate and up-to-date figure ".

As mentioned in another portion of this report a sharp outbreak of smallpox occurred in Alexandra Township which has continued to constitute in several respects a menace to the public health. Conditions in the Township have been the subject of investigation by several Committees of Enquiry in the past without, so far, tangible results. The Urbanised Areas Administration Committee, in particular, having satisfied itself that " outside assistance is essential if adequate public health control in the area is to be secured ", recommended that the existing Health Committee of Alexandra should be discstablished and replaced by a local area committee under the control of the Peri-Urban Areas Health Board—*vide* paragraph 291 of the Committee's final report (U.G. No. 8, 1940). Certain alternative proposals regarding future policy as affecting the Township are, however, now under consideration by the Government and it is trusted that the ensuing year will be productive of positive action in dealing with the problems which the Township presents.

In Natal no new areas were brought under the control of the Local Health Commission which is analogous in many respects to the Peri-Urban Areas Health Board of the Transvaal, so that the activities of the Commission have continued to be confined, in the main, to the control of the areas of Edendale and Wilgefontein (near Pietermaritzburg) and Clermont (near Pinetown). In these areas steady progress in effecting improvements from a public health point of view has been maintained and it is to be hoped that the proved success of this new form of local government will encourage the Provincial Administration to place more of Natal's " black belts " under the control of the Commission as rapidly as possible.

In the Cape Province the Local Board of Bethelsdorp was disestablished in May, 1945, and replaced by a local area committee under the control of the Divisional Council of Port Elizabeth and it is confidently to be expected that substantial improvements in the conditions which have existed for so long in this area will now be effected.

Although the establishment of a Committee of Management for Estoire constitutes a new development in so far as types of local authorities in the Orange Free State are concerned, such a body is, in fact, comparable in most respects with a health committee in the Transvaal. While, admittedly, there have hitherto been relatively few areas in the Orange Free State where the provision of proper control has been proved necessary from a public health point of view, the growth of more closely-settled areas in those districts where gold-mining development is now taking place cannot be reviewed with equanimity unless it is to be accompanied by the institution of approriate measures of control. However, as was indicated in the last report, the Provincial Administration is apparently alive to the problems with which it is likely to be faced in the near future, and a committee of enquiry is at present engaged in carrying out an investigation with a view to the submission of concrete recommendations to the Administration.

While, so far, the proposals relating to the institution of a form of control over areas contiguous to railway reserves in various parts of the Union, which were formulated in outline at the conference which was held in Pretoria in November, 1943, have not been implemented, discussions on matters of detail have proceeded during the year between the Railways Administration and the Provincial Administrations of the Cape and Transvaal. These discussions have now reached a stage when the implementation of the proposals during the ensuing year may confidently be expected. In fact the necessary amending legislation has already been enacted by the Provincial Council of the Cape Province. In respect of the Transvaal no amendments to existing legislation appear to be necessary.

Briefly, the proposals relating to the control of the areas under consideration hinge round the appointment by the Administrator of the Province concerned of railway officials nominated by the General Manager to serve as members of properly constituted Village Management Boards (in the Cape Province) or Health Committees (in the Transvaal) with jurisdiction over defined areas. The following extract from the report of the Deputy Chief Health Officer (Railways) indicates the extent to which the proposals have so far been implemented or agreed upon :—

> " A Local Authorities Branch has been created within the Health Department of the S.A.R. & H. Administration and the release of an official by the Cape Provincial Administration has been secured to enable him to take up the newly-created post of General Secretary to the Local Authorities Committee.
>
> The areas with which this branch will deal at first are Waterval Boven and Komatipoort in the Transvaal, and Touws River, Alicedale and Cookhouse in the Cape. When these have been satisfactorily established as local authority areas, a close examination will be made of other centres to ascertain whether these should be similarly dealt with.
>
> The committee nominated for each local authority will comprise the same members with one exception, this exception being a local member who will be the Station Master in every case except Waterval Boven where the District Engineer will be such member.
>
> The chairman of each committee will be the Railway Health Officer while the members common to each will be the Superintendent (General), Superintendent (Financial), the Estates Assistant and the Works Assistant ".

The lack of adequate supplies of pure water for the inhabitants of various areas in the Union continues to constitute a source of concern to the Department. Various difficulties of both a technical and administrative nature have so far precluded the introduction into Parliament of the proposed Water Supply Bill. Meanwhile the Provincial Council of Natal has had under consideration a draft Water Supply Ordinance based on several of the principles and provisions of the draft Bill so that the successful administration of the Ordinance, if enacted, should prove valuable in securing the passage of the Bill through Parliament when circumstances permit of its introduction.

The action taken by the Administration in ensuring the provision of potable water supplies for the inhabitants of the South Coast areas, particularly Margate, through the proposed Natal Water Supply Board will be watched with interest.

3. Native Health Services.

Natal.

Polela Health Unit.

Main Functions of the Health Unit.

The functions of this Health Unit have become considerably enlarged during the past year. Among the more important of these new functions has been the extent to which the Health Unit has been incorporated in the National Health Centre plan. The Medical Officer-in-Charge has been appointed to assist the Advisory Committee on Health Centres in regard to technical matters pertaining to health centres, and the Health Unit itself is regarded as a 'pilot plant' and an introductory training base for personnel to staff various centres being established in the country. A second important line of expansion has been the authority granted for the establishing of sub-units to serve the people of Impendhle, Polela (Umsimkulu area) and Underburg magisterial areas. Thirdly the ever increasing extent to which the Health Unit has been called upon to render services in connection with control of epidemics in various areas of South Western Natal, has indicated conclusively that the establishment of a Health Unit in any part of the country not only influences its immediate neighbourhood but also actively penetrates to distances up to 50 miles from its headquarters. Furthermore, it stimulates these areas to demand similar services for their people. Finally the work of the Unit which had previously been established has continued to expand, and an ever increasing number of people are influenced by our combined curative-prophylactic-preventive and promotive health services.

Services Provided by the Health Unit.

The Home Visit.

Intensive Family Welfare Service—Polela.

This aspect of our work continues to prove a sound basis for all the Unit's activities. By its very nature, i.e., routine home to home visits of ALL the homes in specific areas regardless of the presence or absence of ill-health in a particular home, it yields an ever increasing return not only of our knowledge of the various families of the area but also in effecting changes in the habits of the people themselves. It has brought us to the stage of not being content with knowing the total population figure of the area served, but to know how many homes and family groups there are, who these families are, what they do and how they live. Instead of being cyphers each man and woman, each child whether at school or not becomes a living entity with a home and a background, with thoughts and behaviour patterns—and each becomes an important part of our lives. Our records tell a story, an ever fuller story, of all those things that influence the health of the individual, the family and finally the community.

The number of homes included in this intensive family welfare service has steadily been increased since 1942. the following figures indicate this expansion.

	Homes.	*Population at 30th June.*
1942.....	130.....	887
1943.....	435.....	2,937
1944.....	733.....	5,184
1945.....	800 plus.....	5,500–6,000

The main brunt of the home visiting was borne by the five male health assistants of the Unit's staff, assisted by a non-certificated nurse of our staff, who is now being converted into a woman health assistant. Medical aids in training also carry out home visits in collaboration with the male health assistants.

The experience the Health Unit has gained with this type of intensive work has been invaluable in estimating the personnel requirements of Units such as this one, practising under adverse conditions in so far as the home visit system is concerned. These adverse conditions are due to the mountainous nature of the country, the very poorly developed communications, including the absence of roads and bridges over the greater part of the area and the relatively scattered homes many of which are almost inaccessible.

The home visit is also being used as our main method of approach in the control of epidemic diseases. It has now been used with success for the last 5½ years and each year that passes it proves itself superior to any mass approach. The technique improves with each epidemic the Unit is called upon to control and the epidemiological knowledge which accumulates is already proving of the utmost value in controlling epidemics as well as reducing the possibility of spread of commuicable disease. Thus the home visit, essential for the practise of social medicine, is proving to be the method of choice for the control of outbreaks of disease, including formidable epidemic diseases. The feature of such work is that *all the homes* of the infected area are visited and not only those with suspect cases. This method, used by the Unit with success in its more intensive general social health work in the Family Welfare areas, has thus an important application to the narrower field of epidemic disease control.

Clinics.

The clinics conducted by the Health Unit are as follows:—

A.—*General curative polyclinics* at which any person no matter where he or she lives may and does attend. These are conducted at the headquarters of the Unit on Mondays, Wednesdays and Fridays, and every Monday at Impendhle. In addition any emergency is attended to on any other day of the week during the day and night. Thus the Unit provides an emergency service for 24 hours a day, seven days a week, and general curative clinics three days a week, plus one at Impendhle. The three days a week at headquarters are set aside for particular age groups, viz. :—

Monday.....	Adults.
Wednesday..	Adolescents and children of school-going age.
Friday.....	Mothers, babies and toddlers.

New cases of any age group are seen each session, but subsequent appointments are made as far as is possible for the particular session which that person should attend. In the case of babies brought to the Unit it is insisted that the mother's history be taken and that she be examined. Other members of the family are then encouraged to attend.

It will be noted that no specialised disease clinics are conducted. The last of these to disappear has been the Veneral Disease clinic, which until January of this year had its special sessions. The rational of this technique of the Unit is mainly directed towards overcoming an unfortunate trend of modern medicine. The development of specialised branches of medicine, in itself desirable and necessary, has often had the effect of 'dividing the indivisible', namely the patient. To such an extent has this become the case that a person is known and classified by the disease from which he suffers. Should there be two or more main pathological entities, e.g., syphilis, dysentery and tuberculosis then the person is put into three separate pigeonholes. Should the venereal disease be the most pressing for the moment then he attends a special clinic, where he receives expert treatment for his syphilis—receiving his regular treatments more often than not without any examination to estimate the progress of his dysentery and tuberculosis—for this he must enter other doors at different times. Thus develops a vicious cycle of specialised physical medicine, where as a result of classification of disease the poor individual is split into as many parts as there are specialists or special clinics for this or that disease entity. It is our contention that this is harmful and often leads to neglect not only of understanding a person as a person but of even missing some additional pathological factors influencing the individual's health. The Health

Unit, if it is to play its part in redirecting the mode of practice must, therefore, strip itself of this "dividing of a person" and must use spccialists and special clinics only where the general practitioner of social medicine finds it necessary in the interest of the patient.

B.—*Health Clinics and Periodic Examinations.*

These have been steadily developed over the past years and gradually separated from the sessions given to general curative polyclinics. The main health clinics conducted are now :—

(1) Ante-natal.
(2) Mother and baby.
(3) Pre-school child centre.
(4) School health examinations.
(5) Special appointments were being made for periodic health examination of other members of families, namely, adult men and women (other than those who fall into categories 1 and 2 above), and adolescents. It was hoped then to evolve a type of family consultation suitable for this area. This has not developed to the extent we hoped, the reason being that with increasing time being given to training of various classes of personnel for health centres, the available staff found it impossible to carry out the detailed investigations necessary. Thus, this stage 5 in our periodic health examination programme must wait a while before it becomes fully developed. In the meantime such persons who belong to this group continue to be seen at frequent intervals at our general polyclinics, where a short general clinical examination supplemented by simple laboratory tests, is carried out.

Care of Mother and Baby.

The special clinic and class for mothers with their babies continues. It is confined to healthy mothers and babies and is only attended by those who are selected after medical examination. Any mothers and babies requiring medical treatment are seen at the curative polyclinic set aside for this group.

In addition to the routine weighings of babies, and examination of clothes, care and diet of the infants by the Sister-in-charge of the class, medical officers carry out periodic examinations of mothers and babies, paying particular attention to their nutritional state. Various supplements such as dried milk, vegetables and iron, vitamin preparations, are given to lactating mothers, and babies who require additional foods are also catered for.

Demonstrations and lectures continue to be given during the time various clinics—health and sick— are being conducted at the Health Unit. These include care of infant, sewing and talks on various diseases including discussions on various local concepts of the cause and nature of diseases.

In addition one of the trained women health assistants started regular sewing and cookery classes for women in the area in which she carries out home visits. Among some of the more interesting developments have been her demonstrations in bread-making, and the incorporation of wheat meal in the recipe of common mealie-meal dishes in the area. Those women attending have learned the use of wheat and like it ; such work, which will inevitably lead to the increased use of wheat as a supplement to the staple maize, should have a profound influence on the occurrence of malnutrition syndromes, more especially those related to the pellagra syndrome.

The materials required for the demonstrations are provided by the women themselves. The demonstration is in reality more in the nature of a co-operative effort, each woman using her own material, and following the instructions of the woman health assistant.

That women health assistants should have training in such work is beyond question and the course of training recommended to the Advisory Committee on Health Centres included such work.

Care of the Pre-school Child.

The need for some form of organised care of the children between the ages of 2–6 led to the devclopment of a pre-school child centre at the Health Units' headquartcrs. The success of this centre led us to establish a second one in a hut in the grounds of the Thembeni School some five miles from the headquarters of the unit. The hut was loaned to the unit for this purpose by the womens' committee of the Presbyterian Church. A third centre is now planned following an African Minister and his wife asking for the establishment of such facilities for pre-school children of their arca.

The habits of clcanliness and more advanced methods of eating, e.g., non-sharing of plates, use of spoons, etc., instead of hands have been steadily inculcated. Games now include sand pits and swings and at the Unit centre a jungle jim has been constructed. The general health of the children has improved considerably— thcre is a decrease in signs of malnutrition and skin diseases like scabies are being wiped out.

There can be little doubt that the pre-school child centre plan as it expands to include an increased number of children will play a vital part in reducing the excessive morbidity and mortality rates of this age group in the population, as not only do the children receive preventive inoculations and reinforced food, but they are regularly examined by a medical officer.

The School Child—School Health Services.

The majority of the children in thc ten schools in this area which were inspected have been successfully vaccinated against smallpox and steadily each school is being visited in order to immunize the children against enteric fever. The standard of health of the children shows decided improvement from year to year, more especially is this change noticeable in regard to cleanliness and the decrease of communicable skin diseases such as impetigo and scabies. The introduction of the National School Feeding scheme has considerably improved nutritional standards. More especially is this noticeable in those schools which are included in the Combined School Meal Service, Polela, where growth of the children has undergone a definite upward trend by comparison with previous years, and the decrease in signs of malnutrition has been obvious to any lay observer of the area.

Every Saturday school children and others of this age group are welcome at the Health Unit. Here they take part in organised classes, such as vegetable gardening, nutrition talks and more recently we have started systematic first aid classes. When facilities are available, as they will be in the next year, domestic science classes for girls and carpentry for boys will be commenced. While here, the children are examined, including laboratory tests for Wasserman reaction, haemoglobin, stools and urines. In addition a register is kept of successful vaccinations against smallpox and immunization against enteric fever.

Recreation and Social Development—Adults and Adolescents.

The Polela People's Club, which is in reality an offspring of the Health Unit, has matintained a programme of concerts, dances, dcbates and discussions for the people of the area. During the year the Club embarked on an ambitious programme by establishing a helping hand fund. The main purpose of the fund is to assist children to further their education by offering scholarships, and in needy cases to assist families in clothing their children so that they can attend pre-school child centres or schools. In addition where it is found that isolation of certain infectious disease cases, such as tuberculosis, is impossible because therc is only one blanket to be shared by three or four persons at night, the fund may assist the family to buy a blanket. Contributions to the fund are made by the people themselves as well as by visitors and various mcmbers of the staff. This year the fund sent one child to high school, and it now has collected some £50 towards scholarships, etc., for next year.

A Womens' Club, formed by women members of the staff and staff members wives, has becn started. Its main function is to teach the women sewing, knitting, mending and cooking. In addition scveral adults are being taught

to read and write. The functions of this club take place in various homes of the area and the club is thus penetrating to all types of the community.

Co-operative Store.—Inspired by a member of the Unit's staff a group of people are discussing ways and means of establishing a local co-operative store.

Beer Feasts.—The main form of recreation of the adult community remains the Beer Feast and drunkenness is an important public health problem. It is hoped in some future report to include an analysis of the incidence of alcoholism. The solution to the problem lies in the provision of other forms of recreation which will be more attractive than sitting and drinking beer. This reason alone justifies the provision of recreation facilities by a health unit.

Library.—The library established at the Unit continues to receive donations and slowly but surely increasing use is being made of the literature available. It is hoped that one room will be set aside as an adult reading and information room when the new building programme is completed.

Non-personal Service.

Housing.—Advice is given regarding any new huts or larger homes that are being constructed. Such advice is for the present mainly concerned with increasing the height of the walls and enlarging the window space.

Sanitation.—Health assistants advise and assist in the construction of compost pits and latrines in homes as well as in schools of the area.

Water Supplies.—All houses not using water obtained from a spring source are encouraged to make use of such water rather than that from streams and rivers which are heavily polluted.

Food Production.—(*a*) The Unit continues with its "Grow more Vegetables" campaign and despite the unfavourable season 1944–45, the general standard was fair. An increasing number of people are joining the vegetable seed co-operative buying group, and the Unit's garden is also increasing its production of seed for local distribution.

(*b*) The vegetable garden itself serves an ever more important function at the Unit. Not only is it most useful for teaching purposes but its production now assists the Unit in the treatment of expectant mothers, lactating women, pre-school and school children. The garden is a tribute to the use of compost fertiliser together with simple soil conservation and anti-soil erosion measures. This year a citrus orchard was started by the planting of three dozen citrus trees and it is hoped to increase this number year by year until the Unit has a fairly substantial orchard providing such fruits for use in treatment of various groups of the population.

Few of our services have had a more satisfactory reception from the people than has our vegetable garden programme, and it has been one of the most successful techniques established by the Unit.

Food Distribution.—The use of food as medicine has far more satisfactory therapeutic results than has any single vitamin or mineral used as a specific and the clinics of the Unit thus make considerable use of food in therapy. In this way the division between medical practice and health practice disappears and a comprehensive programme concerned with the individual or family or community as a whole, can be instituted. The success of this approach in the nutritional sphere is having its effects in all other activities of the Unit leading to the practice of social medicine.

Impendhle Family Welfare Service.

The first of the Sub-Units has been started in the Impendhle area. The start has been a small one. On 1st December, 1944, a Medical Aid was stationed in the Impendhle district in the area of Zithingwana. This is regarded as a temporary measure until such time as negotiations have been concluded regarding permanent sites for the Units to serve the Impendhle, Underburg and Southern Polela areas. The foundations being built should, however, be used by the future complete Unit either by stationing a medical aid there or health assistants and a district nurse.

The Zithingwana area was a useful one in which to commence because—

(1) The Magistrate, Impendhle, was able to arrange temporary accommodation for the aid with an African Minister of the Bantu Presbyterian Church.
(2) There was a large school in the area.
(3) The area was fairly near Impendhle where the medical officers of this Unit conduct a weekly clinic.

On 1st January the medical aid commenced an intensive family welfare service to a limited number of homes. The methods used are the same as those established in the Polela area. On a map of the area each home was plotted and given an address. Following this a census, general and educational, was carried out of each home, and a study of the economic conditions of each family as well as methods of refuse disposal, housing and water supplies was commenced. An immunization programme, confined for the present to smallpox vaccination and typhoid endotoxoid has also been carried out. Persons from this area attending the weekly clinic at Impendhle have their records filed in family files thus allowing for cross reference between the aid's field records and the clinic's findings. In addition the school was visited regularly by the medical aid and the children were examined by the medical officer and aids. The school premises and the school meal have also been investigated and recommendations made to the school authorities.

Health Indices.

Personal—Polela Intensive Family Welfare Service Area.

An intensive study has been made of 733 houses falling within the scope of this welfare service. Space does not permit of publication of the detailed results but the following general remarks are of interest.

In assessing the survival rate of each particular year group as it advances in age we have a technique which more accurately reflects the trend than does an annual mortality rate alone. The survival rate or its opposite, the mortality rate, often depends as much upon the previous experience of the group as it does upon its experience during a particular year. Assessment of the influence of the previous experience of a particular age group is made possible by the type of analysis presented above. In assessing the clinical condition of an individual a clinician always obtains a history of previous experiences from the patient. The technique applied here is similar in that it attempts to outline the history of certain groups of the population. Frost has used it in the analysis of the history of tuberculosis of various age groups in the United States of America, and it is our belief that the use of this method will throw much light on the incidence of various diseases of later childhood and adulthood.

The above remarks are illustrated by some of the trends already being suggested in this introductory analysis. In comparing the survival rates of the cohort born in 1942 and that of 1943, we find that the survival rate after the first year in the former was as low as 80·85 per cent., whereas in the latter it was 91·18 per cent. The respective figures for the second year of life experience was 94·74 and 96·77. The figures are very limited and no conclusions can be drawn as yet. What is required is the continuation of the method from year to year, including more and more persons. The example is quoted as an indication of the possible use of such developmental tables.

The incidence of congenital syphilis is high in each group, a little more than 1 in every 5 (20·55 per cent.) of the total being diagnosed as such. The figures for tuberculosis are an urgent reminder of the need for the protection of young children from infection. The services given by the Health Unit are inadequate. The incidence of whooping cough shows a sudden rise after the first year of life, with a mean annual case rate of 59·26 per 1,000 children. Upper respiratory diseases, infectious skin diseases and gastro-enteritis are extremely common affecting as they do between 40 and 50 per cent. of the children and often on more than one occasion, the annual case rate per 1,000 varying between 180 and 230.

Perhaps the most interesting feature of the analysis is the fact that so few children pass through their early years without having one or other or several diseases. In the group born between 1940 and 1942, only three children

have not been diagnosed as having any of the illnesses analysed. Continuation of this type of work will no doubt tell a story of the influence of different morbidity rates on mortality and general health of the community. Will the children who escape illness in childhood be healthier as the years continue? Will those who are subjected to several attacks of gastro-enteritis be influenced in their later lives? These and similar questions can only be answered by the study of each group in their future lives.

Education.

During the period prior to this year an analysis was made of the standard of education of the adult population of one of the areas in the family welfare service (River Valley area). At present the Unit is analysing the changing standards of education of this community during the past four years. Preliminary findings indicate a definite improvement in (*a*) the age at which children start school and (*b*) the steady progress towards higher standards. The establishment of the Unit's pre-school centre will no doubt act as an additional stimulus to early attendance at school.

A detailed analysis of the data indicates steady progress from year to year. The main change came with the starting of the pre-school centre in 1944, when 17 children of this area in the age group 3–5 attended and in 1945 this was increased to 30 children. In the older age group 6–8 years the difference between 1942 and 1945 is marked, namely 17 of 58 at school in 1942 and 27 of 58 in 1945. Most of this latter group were too old to be affected directly by the establishment of the pre-school centre, but indirectly parents were pressed to allow these children to go to school in view of the fact that many of their younger brothers and sisters were attending the pre-school centre and the older ones would thus be left in the lurch. Intensive propaganda continues at every home where the children are not at school, and it is expected that the years to come will see an even more rapid advance than is shown in this analysis. The pre-school child centre will play a big part in this advance, as is evidenced by the figures for the 4 and 5 year olds in 1945. Of this group no fewer than 66·66 per cent. are either at the pre-school child centre or in Sub-A at a school. Provisional analysis of the various cohorts indicates that a group which starts in a backward way continues to be relatively backward when compared with a cohort which starts favourably. Further investigation is required to confirm this in the various age groups of childhood. The establishment of pre-school child centres will not only influence the health of this particular age group of children but will also considerably influence their future school careers. It is hoped at a later date to present a more detailed analysis of the influence of standard of education on morbidity and mortality rates in the community. Analysis of our tubertulosis and leprosy cases points to the possibility of there being a high correlation between these diseases and relatively low standards of education for the area itself.

Non-personal Health Indices.

Temperature conditions were generally higher than those for our previous years. The rainfall was less evenly distributed than during the previous year and severe hailstorms between January and March had a devastating effect on the crops growing in many of the valleys. Our preliminary figures for the crop reaped in June-July, 1945, indicate the figures to be very much lower than those for 1944. The forthcoming year is thus likely to be a severe one for the people of our area. This will no doubt be aggravated by the general shortage of maize and mabela reaped in the country as a whole.

Food Production.

Maize.—The year 1944 was a decidedly better one than was 1943, but despite the general improvement in maize crop, there are still a considerable percentage of homes who do not produce enough for their requirements and must, therefore, depend upon import of crops sold in the stores.

As was the case with the main crop, maize, we noted a decided improvement of the yield of mabela this year by comparison with that of 1943.

Fresh Vegetable Production.—The general standard was below that of last year. The season 1944–45 has been the worst experienced since the Unit was established. Coupled with this was the fact that several members of the Unit's staff were away from this area for considerable periods assisting in the control of smallpox in distant districts. These two factors, were largely responsible for the lowering of the standard, but the level maintained despite these adverse conditions is an indication that the people are on the move forward and that education carried out during the past five years has produced a definite momentum within the population itself.

Comparison between the various areas indicates similar findings to those reported on in previous annual reports. The longer an area is influenced by health assistants the more advanced it is.

Milk Production.—There was very little difference in the quantity of milk available per home in 1944 from that of 1943. There was, however, a decrease in the number of homes which had no cows in milk. The milk consumption index is one of the keenest pointers to the health of a community and our figures over the past three years indicate the very poor condition of the people in this respect.

Sanitation.

Six homes now have pit latrines in use, and two of the schools serving children in the Polela "Family Welfare" area, have three and one pit latrines respectively. The desire for latrines is slowly gaining momentum, but as indicated in previous reports the conversion of the people to the stage of desiring and appreciating the importance of lavatory provision is necessarily a slow one.

The manufacture of compost in pits remains the Unit's approach to the problem of the disposal of animal, household and garden refuse.

There is no change to report regarding water supplies. Survey and study of sources of supply continues.

Polela Unit as a Training Base for the Health Centres—Its Concepts and Functions.

The appointment of an Advisory Committee for health centres and the Government's acceptance of responsibility for the establishment of a Health Centre Service led the Department of Public Health to establish a training scheme at Polela to fit various classes of personnel for health centre practice. Such a demand on a practising Unit led to considerable changes involving not only extensive additions to buildings but also a re-definition of the functions of various members of staff and additional personnel. It demanded also a clarification of thought as the Department and the Advisory Committee decided to initiate future centres on the lines already developed at Polela. Polela was to be in effect, the 'pilot-plant' for these future health centres. The medical officer-in-charge was appointed as a technical officer to the Advisory Committee on Health Centres, and for the period June to December, 1944, he was away from the Unit on full time work in connection with the establishment of future centres. On his return, the Unit's staff had slowly to be so re-organised as to relieve several members from routine duties to prepare them for their future functions as tutors and demonstrators. Experimental classes and field demonstrations were started to give these men and women experience in teaching. In this way a small team, which could form the nucleus of a far larger staff, has been built up.

The various techniques which have developed at the Unit during the past five years had each to be scrutinised again—the effectiveness of each had to be checked and the good sorted from the bad. Those only applicable to a community such as Polela had to be separated from those which could be applicable to all communities. The technique of working from the person to his social and physical environmental needs emerged as the guiding principle. What was he thinking, what was he doing and what was the condition of his bodily health? These questions had to be answered before we could understand the family and the social milieu in which it existed, and in answering these personel problems we were concerned with his physical environment—his house, his garden, his water supplies, and so on. Our services had, therefore, to include

treatment of the sick and care of the healthy. Treatment of the sick had to include, not only the immediate alleviation of a specific disease, but also a long term programme to prevent recurrence and spread to others. Care of the healthy is as yet an uncommon occurrence for so few are healthy. Treatment of the community, rather than the individual as such, had to be applied in regard to much of the ill-health found to exist. The approach to such injurious agents as poverty and ignorance could only be long term—the need for more schooling, the need for increasing the production of foodstuffs, the need for a broad mental hygiene programme undermining the beliefs in witchcraft and sorcery had to be viewed not only as it affected an individual sick person but even more important as it influenced the general progress of the people towards a better understanding of biological and health problems. Thus the term " preventive medicine " and " curative medicine " began to lose definition and merged with one another in a more comprehensive outlook, best described by the title of social medicine. The health centre of the future should thus be guided by this development in concept and its functions should be to act as the practitioner of social medicine. Being concerned mainly with persons such practice is largely clinical and all other studies and practices are carried out with the basic aim of understanding the people and changing their habits, so as to advance their health.

The next thing necessary before Polela experience could be exploited to the full was to see to what extent the Polela Unit had solved the problem of providing the right types of personnel for the practice of social medicine. How had it started and what changes had been developing as its function was modified in accord with its changing concept of practice? The team originally allowed included a medical officer, a medical aid, five nurses, five male health assistants and 2 general labourers. The functions of each class was not very clearly defined, the medical officer was to be the administrator as well as conduct various clinics at strategic points in the area; the medical aid was to assist the medical officer there being no definition of how he was to assist; the health assistants (of the original five, four had been malaria assistants and one an assistant on a nutrition survey) were to concern themselves with environmental hygiene, spotting of infectious diseases and control of epidemics; the nurses were to carry out nursing work at clinics and in the homes of the people. It was assumed that at least one nurse and one male health assistant would be stationed at " district clinics ".

What training had each class to fit them for their jobs? The medical officer had been in the Department for a year prior to this health unit appointment, during which time he had undertaken a nutrition and health survey of African school children in various parts of the country, and after appointment spent six months visiting and working at various institutions of the Department, e.g., Pretoria Leper Institution, Rietfontein Infectious Diseases Hospital, the King George V Tuberculosis Hospital and at Department headquarters itself learning about Departmental procedures. He also had some experience at the South African Institute for Medical Research.

The medical aid had undergone a four year training at Fort Hare University College and one year at the McCord Zulu Hospital, Durban. During the four years at Fort Hare the training included biology, physical science, anatomy and physiology, bacteriology and parasitology, pharmacology, public health, medicine, surgery and obstetrics—a course similar to the health course but inferior in quality. The year at McCord's Hospital provided further clinical instruction and the Union Health Department arranged through the Deputy Chief Health Officer, Durban, for a further course of practical demonstrations in public health practice.

The nurses were expected to have had hospital training in general nursing and/or midwifery. Of these we need not say too much, as we remained without any for a long time and even to this day have not got a full complement of qualified nurses.

As stated above four of the male health assistants had been malaria assistants. They had had a course of ten days in malaria work and were then sent out to work under supervision. Their period of such service varied from a few months to one, an experienced assistant of four years, who had left the Department.

Thus our original team of seven persons (M.O., Medical Aid and five male health assistants)—of whom five are still at the Unit—had to be moulded into a team. Training this team was thus our first object. The training of the health assistants included the study of such subjects as housing, water supplies, sanitation, vital statistics and mapping, infectious diseases, insect and other animal carriers of disease the collection of specimens and a course in elementary physiology and first aid.

It was in 1942 when the unit started an intensive survey of a group of 130 families that a rapid advance in the concept of our function took place. It was the experience of this survey that led us to the practical application of a broader programme of work than had been originally undertaken. We were no longer satisfied to view the problem of sanitation as one involving the digging of pit latrines and building a superstructure, no longer could we view the question of water supplies protection as being a non-personal public health service, a person attending our clinic was no longer a case of this or that; nutrition work could not be divorced from food production and food production was no longer to be regarded as something apart from health work. Each of these was a personal problem requiring careful study and an understanding of the people we were seeking to serve—their beliefs regarding refuse disposal were as important to know as it was to know how to build a latrine, it was just as important to know the series of social and biological factors which led up to and resulted from a person's illness as to make a physical diagnosis of the illness itself. None of these concepts were new—the Peckham experiment in England had led the way, Socialised Medicine in Soviet Russia had developed on such a basis, the Dutch in Java had established health units with the use of ' mantris ' (health assistants) for routine home to home visiting, the American public health units with their public health nurses and medico social workers had also made strides in this direction. What was new to us was not the general concept of an ideal. It was the reducing of this vague ideal to an actual form of practice that was new. It was this practice of social medicine which included both ' curative ' and ' preventive ' work and in including them moulded a new technique—a technique which has come to be the basis of health centre services, and as such required a re-orientation in the training of the necessary personnel. We thus developed a clear picture of the nature of the service to be given and with this before us we were able to develop the types of personnel required. Medical officers would need to have experience in social medicine before proceeding to establish health centres. Such experience could at present be best gained at Polela.

The shortcomings of Polela are clearly seen— its practice is confined to a rural African community. Future training must take place on a more extensive background, the canvas must picture varied racial and social settings, but as a pilot plant Polela had been of use and it should be incorporated in any scheme for extension—too often it has been the rural background which has been neglected in various social and medical studies. Medical aid training has undergone a revolutionary change since the first men graduated in 1939. The medical aid course has been replaced by a three year course leading to a B.Sc. (Hygiene). The results of this change remain for the future to assess as the first graduates will emerge at the end of this year, 1945. The biggest change has been in the training of health assistants—their function has so broadened that the training we gave the first group at this unit would no longer be adequate. Not only has the training undergone a change, but with the whole basis of their work being of a social health nature, it became necessary to add women health assistants. The training of men and women would be basically the same, but the practical course would differ. The men would have more practical experience in physical environmental work, e.g., housing, sanitation and water supplies, whereas the women would have more experience in such personal matters as care of the expectant mother, mother and baby, sewing, cookery and so on. Of the general personnel required we are left with the further training of nurses to fit them for health centre practise.

Owing to the shortage of nurses in the country this problem has not been faced on the same scale as has that of the other groups. The general trained nurse would best fit in as a curative nursing sister at the health centre and in the homes of the people. Her training has fitted her to tend the sick and as such she fills an important place in the team. Her training would involve the technique of home nursing and her place in the team of workers.

Such then is the basis of the training scheme being prepared at Polela.

Transvaal.

At the Bushbuckridge Health Unit a great deal of attention is given to the improvement of nutrition, particularly in the schools. Close co-operation exists with the Education Department. The schools receive regular monthly visits by a native health assistant as well as a native agricultural demonstrator, the latter being an official of the Education Department. The native health assistants are responsible for hygiene instruction while the native agricultural demonstrators give attention to vegetable gardens and orchards.

It has been disheartening recently to see several school orchards and vegetable gardens ruined by game, goats and cattle, owing to inadequate fencing. As regards game it must be recognised that successful farming is not possible where this abounds as in the lowveld. At a school in the area a fence 8 feet high was recently cleared by kudu one night and 72 fine paw-paw trees were demolished. This illustrates the difficulty of keeping game away from gardens.

Meetings with the chiefs and their people, at which instruction on health matters has been given, have been held and there is no doubt that the natives are gradually becoming more health minded. This is obvious from the cleaner appearance of the patients attending the clinics and the reports which are brought in by the native health assistants.

Health days were held at Bushbuckridge, on one occasion for the chiefs and indunas and on another for native teachers. The object of these health days is to educate the leaders among the natives in regard to the kinds of food that should be eaten daily and to endeavour to get them to produce these foods and consume them regularly. Invitations were accordingly sent out to all chiefs and indunas in the area, as well as to the superintendents and head teachers of native schools. The instruction was divided into three sections. Firstly theoretical instruction regarding nutrition, secondly practical instruction consisting of a meal, the food value of each item being explained as it was being served, and finally a demonstration of vegetable gardens, orchards, etc., such as would be desirable and possible for local natives to have at their own homes. The natives were shown round the vegetable gardens at the unit and a demonstration was given of the correct method of planting the seeds, the necessity for utilising manure and ash and of making compost. On the day for native teachers the opportunity was given of presenting prizes consisting of different types of garden tools for both the best school orchard in the area and the best home garden. Prizes were also given to the chiefs and indunas who had shown the greatest interest and had done most to influence their people to carry out the instruction given by the health unit as regards nutrition.

Weekly clinics at Bushbuckridge and Arthur's Seat have been continued and health instruction is given regularly at these clinics. The numbers attending have been large and this has rendered individual instruction difficult.

It has been gratifying to note that the native health assistants are gradually endeavouring to apply in their own lives as well as in their work the instruction they have received.

It has been discovered during the current year that the question of sanitation presents peculiar problems in the lowveld. As a result of investigations made in co-operation with Dr. Smit, of the Entomological Division of the Department of Agriculture, it has been shown that there are certain types of flies which breed in pit privies at a depth of 25 to 40 feet, even when there is little or no access of light. This problem presents a serious difficulty and requires further investigation.

Transkei.

Owing to pressure of work caused by the anti-typhus and smallpox campaigns it has been impossible to do more than the routine work at the Umtata rural clinics. The seven rural clinics situated at Mqekezweni, Mpunzana, Mputi, Qokolweni, Tabase, Kambi and Xwili continued to do good work in spite of these difficulties and of several staff changes. Additional huts, 20 feet in diameter, are being erected at each of the clinics for housing patients for observation purposes. These huts will also be used for observing children requiring weaning, or where there are feeding difficulties. The ultimate conversion of each of the clinics into health centres along the lines of the Polela Health Unit is visualised.

Health education by means of the display of posters, pamphlets and films has been carried out. Pamphlets provided by the Red Cross Society are distributed to schools, local authorities and Native Commissioners. They are also displayed in the Department's offices for the benefit of the public.

4. Maternity and Child Welfare Section.

General Review.

Act No. 57 of 1935 which makes provision for nursing and maternity services outside institutions, i.e., the homes of the people, was promulgated exactly ten years ago. Shortly before the Act was passed a Maternity and Child Welfare Section was formed in the Department with a woman medical officer and three nurses in addition to certain clerical staff. This section took over all the work in connection with the registration and inspection of nursing and maternity homes, the administration of district nursing services and the regulations regarding the practice of midwives and has gradually assumed responsibility for most matters concerning maternity, child welfare and nursing that are dealt with by the Department.

At first routine tours to all urban local authority areas were undertaken to investigate and report on local needs, to explain the new Act to the public and to persuade them of the need for proper nursing and maternity services.

The interest of the public was aroused and gradually the demand for qualified midwives and nurses increased to such an extent that it eventually exceeded the supply.

The majority of bodies employing or desiring to employ district nurses are lay bodies, therefore, there has been a constantly increasing demand for advice and assistance with the establishment and organisation of district nursing services and where possible officers from the section have been sent to the centres to give the required assistance, but owing to the shortage of staff (there have been only two nurses to carry out the work for the past sixteen months), this has not always been possible and many queries have had to be answered by letter. The policy of visiting a centre to discuss and solve local difficulties on the spot has proved to be by far the most effective and these visits together with the routine inspection visits paid to centres has brought the section into close contact with the public it serves and is helping to bring about that friendly spirit of co-operation which is so desirable.

In addition to the above, inspections of private midwives have been carried out in the smaller towns, and local authorities have been advised regarding the listing and supervision of midwives.

Nursing and maternity homes have also been inspected and advice given regarding structure and management. All reports and annual returns from these homes have been carefully scrutinised and unsatisfactory points followed up.

The following figures show the field work carried out by the two departmental nurses during the past year.

Centres visited, 220.

Inspections carried out 545, as follows:—

Nursing homes, 93.

Work of Health Visitors, 6 (Health Visitors are not inspected where there is a full-time medical officer of Health).

Registered Midwives—
European, 119; Non-European 13.

Unqualified Midwives—
European, 68; Non-European, 76.
(Total number of midwives inspected, 276.)

Work of District Nurses—

European	80
Coloured	19
Native	71

(Total number of inspections of district nurses, 170.)

Other Work—

Meetings addressed	26
Persons interviewed	660
Actual organisation of services	29
Special investigations	37

Similar work has been carried out each year for the past ten years and full reports have been kept for reference. During their visits the nurses' attention has often been drawn to other local health problems and these have been reported to the relevant section for any action necessary.

The need for maternity accommodation for rural cases which could not easily be attended in their own homes by doctors or qualified midwives has been continually stressed, both to local communities and to the Provincial Administrations and as a result of Departmental recommendations the Transvaal Provincial Administration agreed in 1937 to pay for the admission of pauper maternity cases to certain private maternity homes where there were no hospitals. This year the Orange Free State Provincial Administration has also undertaken to pay for pauper maternity cases admitted to private maternity homes.

Since the taking over of Poor Relief by the Central Government in 1940 the Department has also indirectly subsidised maternity homes established by charitable organisations in the Cape.

Although not spectacular very steady progress has been made during the ten years under review. Statistics show that the maternal mortality rate has fallen from 5·99 per 1,000 for 1934 to 2·2 per 1,000 for 1944. The infant mortality rate has fallen from 60·79 per 1,000 for 1934 to 42·53 per 1,000 for 1944. The number of district midwives and nurses has increased from 47 at 31st December, 1935, to 551 at 30th June, 1945, while the actual number of posts approved at the latter date exceeded 700. The number of European births occurring in hospitals and maternity homes has increased from 8,007 or 17·84 per cent. of total live births in 1934 to 26,068 or 42·57 per cent. of total live births in 1944. The number of nursing homes with unqualified persons in charge has decreased considerably.

Although there are no definite statistics, reports show that the number of unqualified midwives listed with urban local authorities has decreased steadily and the Europeans in quite a number of urban areas are now served entirely by qualified midwives.

Unfortunately the position regarding non-Europeans compares very unfavourably with that of Europeans but, with the increasing appointments of non-European district midwives, it is improving and there are a few areas where the non-Europeans are served only by qualified midwives.

The staffing of and the accommodation provided in nursing and maternity homes has improved; so too have the working conditions and salaries of district nurses.

Infant Welfare.

Tables 34 and 35 show the mortality rates for European, Asiatic and Coloured infants under one year of age for the year 1944.

The European rate has fallen again and is the lowest yet recorded in South Africa. The rates recorded for the same period in England and Wales was 46 per 1,000 live births and for Scotland 65 per 1,000 live births. It is interesting to note that the fall has been greatest in urban areas but the rate in urban areas is still higher than in rural areas, i.e., 43·30 (50·50) per 1,000 live births in urban areas compared with 40·66 (40·83) in rural areas. The figures in brackets are for 1943.

The death rate among Asiatic infants was lower for 1944 but the rate for Coloureds was higher.

Of the 2,605 deaths amongst European infants under one year the major causes are diarrhoea and enteritis, 515; prematurity, 442; pneumonia, 436; congenital malformations, 210; asphyxia during or after birth, 156; and intracranial or spinal haemorrhage due to injury at birth, 130.

There was 1,240 (1,356) European stillbirths during the year, i.e. 19·84 (22·55) per 1,000 total births and 20·24 (23·07) per 1,000 live births.

TABLE 34.—EUROPEAN INFANTS: BIRTHS AND DEATHS UNDER ONE YEAR REGISTERED AND INFANTILE MORTALITY RATE, DEATH RATE PER 1,000 LIVE BIRTHS, 1919-1944

Year	Cape.			Natal.			Transvaal.			Orange Free State.			Union.		
	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.
1919	16,749	1,351	80·66	2,910	191	65·64	15,338	1,326	86·45	4,727	382	80·81	39,724	3,250	81·81
1920	18,425	1,654	89·77	3,256	235	72·17	16,768	1,576	93·99	4,996	448	89·67	43,445	3,913	90·07
1921	18,062	1,382	76·51	3,370	203	60·24	16,582	1,374	82·86	5,288	379	71·67	43,302	3,338	77·09
1922	18,248	1,294	70·91	3,294	180	54·64	16,370	1,292	78·92	4,920	357	72·56	42,832	3,123	72·91
1923	18,296	1,353	73·95	3,229	197	61·01	15,619	1,261	80·74	5,037	328	65·12	42,181	3,139	74·42
1924	18,730	1,296	69·19	3,410	273	80·06	15,287	1,171	76·60	4,919	382	77·66	42,346	3,122	73·73
1925	18,366	1,343	73·12	3,509	206	58·71	16,348	1,059	64·78	5,188	361	69·58	43,411	2,969	68·32
1926	18,675	1,196	64·04	3,588	189	52·68	16,304	1,186	72·74	5,309	273	51·42	43,876	2,844	64·83
1927	18,537	1,293	69·75	3,435	166	48·32	17,050	1,359	79·71	5,325	314	58·97	44,347	3,132	70·63
1928	18,032	1,240	68·77	3,514	184	52·36	17,949	1,370	76·33	5,318	365	68·63	44,813	3,159	70·49
1929	19,008	1,169	61·50	3,650	177	48·49	18,227	1,342	73·63	5,334	280	52·49	46,219	2,968	64·22
1930	19,468	1,332	68·37	3,641	159	43·65	19,108	1,386	72·54	5,317	300	56·42	47,534	3,177	66·63
1931	19,180	1,182	61·63	3,538	162	45·79	18,733	1,267	67·65	4,975	317	63·72	46,423	2,928	64·07
1932	18,284	1,205	65·90	3,373	204	60·48	18,376	1,402	76·30	4,911	271	55·18	44,944	3,082	68·57
1933	17,931	995	54·49	3,441	166	48·24	18,452	1,266	68·61	4,695	299	63·68	44,519	2,716	61·01
1934	17,642	1,022	57·93	3,310	157	47·43	19,327	1,279	66·18	4,599	270	58·71	44,878	2,728	60·79
1935	18,242	1,016	55·70	3,441	167	48·53	21,109	1,537	72·81	4,925	277	56·24	47,717	2,997	62·81
1936	18,162	980	53·96	3,606	189	52·41	22,192	1,454	65·52	4,670	249	53·32	48,630	2,872	59·06
1937	18,404	1,012	54·99	3,766	175	46·47	23,814	1,439	60·43	4,894	252	51·49	50,878	2,878	56·57
1938	18,727	962	51·37	3,886	193	49·67	24,568	1,322	53·81	4,884	214	43·82	52,065	2,691	51·69
1939	19,022	984	51·73	4,056	151	37·23	25,795	1,304	50·55	4,644	209	45·00	53,517	2,648	49·48
1940	19,091	872	45·68	4,218	224	53·11	26,383	1,431	54·24	4,747	198	41·71	54,439	2,725	50·06
1941	19,026	884	46·46	4,361	180	41·27	26,711	1,481	55·74	4,471	226	50·55	54,569	2,779	50·93
1942	19,422	958	49·38	4,445	202	45·44	27,615	1,298	47·00	4,661	212	45·48	56,143	2,670	47·52
1943	20,169	921	45·66	4,802	199	41·44	28,937	1,448	50·40	4,857	212	43·65	58,765	2,780	47·31
1944	20,540	836	40·70	5,057	181	35·79	30,682	1,386	45·17	4,974	202	40·61	61,253	2,605	42·53

TABLE 35.—INFANTILE MORTALITY: ASIATICS AND MIXED 1944.

Province	Asiatics.			Mixed and other Coloured.		
	Live Births.	Infantile Deaths.	Rate per 1,000 Births.	Live Births.	Infantile Deaths.	Rate per 1,000 Births.
Cape	407	34	83·54	35,501	5,779	162·78
Natal	9,132	808	89·58	934	120	128·48
Transvaal	1,553	157	101·09	1,889	313	165·70
Orange Free State	—	—	—	301	73	242·52
UNION	11,092	999	90·06	38,625	6,285	162·72

Maternal Welfare.

Tables 36 and 37 show the European, Asiatic and Coloured maternal mortality rates for the year ending 31st December, 1944.

The European maternal mortality rate is the lowest on record in South Africa and compares favourably with New Zealand where the rate was 2·65 per 1,000 live births and Scotland where the rate was 3·1 per 1,000 live births for the same year.

There is a drop in both the Asiatic and Coloured maternal mortality rates for 1944 but this is not significant as the rates for the last five years have remained much the same with slight variations.

Of 61,253 (58,765) European births, 26,068 (23,201) took place in institutions, i.e., 42·55 per cent occurred in institutions compared with 39·6 per cent. last year.

TABLE 36.—MATERNAL MORTALITY: EUROPEANS.

Year.	Live Births Registered.	Deaths due to Puerperal Causes.				
		Number.		Rates per 1,000 Live Births.		
		Puerperal Sepsis.	Other Puerperal Causes.	Puerperal Sepsis.	Other Puerperal Causes.	Total Puerperal Mortality.
1926	43,876	88	112	2·06	2·50	4·56
1927	44,347	101	112	2·28	2·53	4·81
1928	44,809	102	121	2·28	2·70	4·98
1929	46,219	140	103	3·03	2·23	5·25
1930	47,536	119	131	2·50	2·76	5·26
1931	46,423	116	102	2·50	2·20	4·70
1932	44,944	126	113	2·80	2·51	5·31
1933	44,519	113	101	2·54	2·27	4·81
1934	44,878	121	148	2·69	3·30	5·99
1935	47,717	119	107	2·49	2·24	4·73
1936	48,630	116	132	2·39	2·71	5·10
1937	50,878	99	124	1·94	2·44	4·38
1938	52,065	78	114	1·50	2·19	3·69
1939	53,517	69	124	1·29	2·32	3·61
1940	54,439	67	116	1·23	2·13	3·36
1941	54,569	46	90	0·84	1·65	2·49
1942	56,143	60	99	1·07	1·76	2·83
1943	58,765	45	122	0·77	2·08	2·85
1944	61,253	42	93	0·68	1·52	2·20

TABLE 37.—MATERNAL MORTALITY: ASIATICS AND MIXED: UNION.

Year.	Live Births Registered.	Deaths due to Puerperal Causes.				
		Number.		Rates per 1,000 Live Births.		
		Puerperal Sepsis.	Other Puerperal Causes.	Puerperal Sepsis.	Other Puerperal Causes.	Total Puerperal mortality.
ASIATICS.						
1940	9,531	16	37	1·68	3·88	5·56
1941	9,841	16	44	1·63	4·47	6·10
1942	10,262	26	40	2·53	3·90	6·43
1943	10,893	26	40	2·39	3·67	6·06
1944	11,092	23	41	2·07	3·70	5·77
MIXED AND OTHER COLOURED.						
1940	38,366	81	129	2·11	3·36	5·47
1941	38,412	88	121	2·29	3·15	5·44
1942	36,631	57	111	1·56	3·03	4·59
1943	37,697	64	128	1·70	3·40	5·10
1944	38,625	55	120	1·42	3·11	4·53

TABLE 38.—EUROPEAN DEATHS FROM PUERPERAL CAUSES BY AGE GROUPS.

CAUSES.	1943.								1944.							
	All Ages.	15–19.	20–24.	25–29.	30–34.	35–39.	40–44.	45 and Over.	All Ages.	15–19.	20–24.	25–29.	30–34.	35–39.	40–44.	45 and Over.
Post Abortive Infection.																
Spontaneous, Therapeutic or Unspecified Origin	13	1	4	1	1	4	2	—	10	—	1	3	5	1	—	—
Abortion induced for reasons other than Therapeutic	4	—	2	1	1	—	—	—	1	—	—	—	1	—	—	—
Abortion without Mention of Septic Condition.																
Spontaneous, Therapeutic or of Unspecified Origin	8	2	—	2	3	1	—	—	6	—	1	—	—	4	1	—
Abortion induced for reasons other than Theurapeutic	2	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—
Ectopic gestation	11	—	—	3	4	—	4	—	10	—	—	3	5	2	—	—
Haemorrhage and Diseases of Pregnancy.																
Haemorrhage from Placenta Praevia	2	—	—	1	—	1	—	—	1	—	—	1	—	—	—	—
Haemorrhage from Premature separation of Placenta and other accidental haemorrhage (except Abortion)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other and unspecified haemorrhage	3	—	1	1	1	—	—	—	3	—	—	—	2	1	—	—
Eclampsia	15	1	4	2	3	5	—	—	—	—	—	—	—	—	—	—
Albuminuria and Nephritis	4	2	—	1	—	—	1	—	14	1	5	2	2	4	—	—
Acute Yellow Atrophy of the Liver	1	—	—	—	—	1	—	—	1	—	—	—	1	—	—	—
Other Toxaemias	6	—	1	1	2	1	1	—	—	—	—	—	—	—	—	—
Other diseases and accidents	3	1	1	—	1	—	—	—	7	—	1	1	1	4	—	—
Haemorrhage and Diseases of Childbirth and the Puerperium.																
Haemorrhage from Placenta Praevia	4	—	—	—	3	1	—	—	—	—	—	—	—	—	—	—
Haemorrhage from Premature separation of Placenta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other haemorrhages during childbirth	2	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—
Other haemorrhage after childbirth	14	1	—	5	3	4	—	1	13	—	1	2	5	4	1	—
General or local puerperal infection (including puerperal tetanus) with or without mention of Pyelitis	21	1	6	1	4	4	4	1	24	1	5	6	6	5	1	—
Thrombo Phlebitis	2	—	—	—	1	1	—	—	2	—	—	—	2	—	—	—
Embolism and sudden death	5	—	—	1	3	1	—	—	5	—	—	3	1	—	1	—
Eclampsia	8	1	1	1	3	1	1	—	4	1	1	—	1	1	—	—
Albuminuria and Nephritis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute Yellow Atrophy of the Liver	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Other Toxaemias	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other accidents	32	—	4	6	11	7	3	1	32	1	7	4	11	6	3	—
Other or unspecified diseases	6	—	—	1	3	1	1	—	2	—	—	—	2	—	—	—
TOTAL	167	10	24	30	49	34	17	3	135	4	22	25	45	32	7	—

Nursing and Maternity Homes.

The total number of nursing and maternity homes registered with the Department at 30th June, 1945, was 376 with 5,843 beds, 1,107 qualified nursing staff and 1,047 unqualified nursing staff, i.e., an average of 1 qualified nurse to 5·2 beds or 1 nurse (qualified and unqualified) to 2·7 beds.

During the year 161 inspections were made, 93 by Departmental officers and 68 by officers attached to local authorities.

Of the 376 nursing and maternity homes on the register. 39 were considered to have inadequately qualified persons in charge.

During the year 28 *new* homes were registered, all of these had suitably qualified persons in charge. Two maternity homes previously in charge of registered midwives were temporarily registered with untrained midwives in charge because of the difficulty in obtaining trained staff. One of these subsequently closed down. Two nursing homes which admit maternity cases and which were previously registered in the names of doubly qualified nurses, were re-registered in the names of registered nurses with no midwifery certificate.

The position at 30th June, 1945, was as follows, last years' figures in brackets :—

(1) 14 (13) Homes were in charge of unregistered persons 10 of these admitted maternity cases only while of the 4 which admitted both general and midwifery, 3 were mission hospitals and the persons in charge were trained but not registered with the South African Nursing Council.

(2) 14 (17) Homes to which general cases were admitted were in charge of midwives.

(3) 11 (9) Nursing homes to which maternity cases were also admitted were in charge of registered nurses who had no midwifery certificate.

(4) 11 (12) Nursing homes run by medical practitioners did not always have satisfactory nursing staff.

Of the above 50 nursing homes 20 admit mostly non-European cases and of these 15 were Mission hospitals.

TABLE 40.—NURSING HOMES REGISTERED WITH THE DEPARTMENT.

Year.	Cape.	Transvaal.	Natal.	Orange Free State.	Total.
As at 30/6/1929	104	90	43	26	263
As at 30/6/1930	124	91	54	29	298
As at 30/6/1931	110	98	51	25	284
As at 30/6/1932	95	94	44	26	259
As at 30/6/1933	105	100	46	25	276
As at 30/6/1934	115	103	43	28	289
As at 30/6/1935	126	128	42	28	324
As at 30/6/1936	120	116	46	34	316
As at 30/6/1937	134	120	49	35	338
As at 30/6/1938	140	126	55	55	376
As at 30/6/1939	147	124	61	48	380
As at 30/6/1940	146	125	62	52	385
As at 30/6/1941	145	123	60	53	381
As at 30/6/1942	140	123	57	45	365
As at 30/6/1943	146	119	55	53	373
As at 30/6/1944	146	118	49	57	370
As at 30/6/1945	142	127	54	53	376

TABLE 41.—BED ACCOMMODATION AVAILABLE IN NURSING HOMES.

Province.	1942.		1943.		1944.		1945.	
	European.	Non-European.	European.	Non-European.	European.	Non-European.	European.	Non-European.
Cape.....	1,307	318	1,319	432	1,288	544	1,308	575
Transvaal.....	1,632	222	1,495	301	1,500	319	1,704	276
Natal.....	696	990	773	907	851	809	899	790
Orange Free State	232	19	250	13	261	14	279	12
TOTAL.....	3,867	1 549	3,837	1,653	3,900	1,686	4,190	1,653

TABLE 42.—PERSONNEL OF NURSING HOMES.

Province.	European.		Non-European.	
	Qualified.	Unqualified.	Qualified.	Unqualified.
Cape.....	341	274	8	53
Transvaal.....	443	308	15	67
Natal.....	202	154	27	167
Orange Free State.	71	24	—	—
TOTALS.....	1,057	760	50	287

TABLE 39.—NURSING AND MATERNITY HOMES INSPECTED DURING THE YEARS ENDED 30TH JUNE, 1940, 1941, 1942, 1943, 1944 AND 1945, RESPECTIVELY.

PLACE.	INSPECTIONS.											
	By Officers of Local Authority.						By Departmental Officers.					
	1940.	1941.	1942.	1943.	1944.	1945.	1940.	1941.	1942.	1943.	1944.	1945.
Cape Province.												
Cape Town.....	22	23	28	23	16	23	—	—	—	34	2	—
East London.....	4	8	6	6	11	9	2	3	—	3	6	—
Port Elizabeth.....	4	5	5	4	6	3	—	—	—	—	—	—
Elsewhere.....	1	2	1	—	1	1	57	65	47	38	42	18
Natal Province.												
Durban.....	11	16	12	10	—	—	—	—	—	—	—	—
Pietermaritzburg.....	—	2	2	6	3	3	—	—	—	2	—	—
Elsewhere.....	—	—	—	11	—	—	15	27	16	19	10	2
Transvaal Province.												
Johannesburg.....	28	27	6	33	28	15	—	—	—	—	—	—
Other Rand L.A.'s...	14	10	12	7	7	9	—	—	6	3	—	—
Pretoria.....	7	7	3	5	6	5	1	2	3	6	6	1
Elsewhere.....	1	—	—	—	—	—	34	28	39	39	7	37
Orange Free State.												
Bloemfontein.....	—	—	—	—	—	—	4	—	3	3	1	—
Elsewhere.....	—	—	—	2	—	—	19	26	24	34	14	21
UNION.....	92	100	75	107	78	68	132	151	138	181	88	79

District Nursing.

Over 700 district nursing and midwifery posts had been approved by 30th June, 1945, but only 551 of these were filled, i.e., 269 by Europeans and 52 by Coloureds and 230 by Natives. This shows a slight increase over last year, particularly among the Coloureds and Natives. There are still no Indian district nurses or midwives being employed.

It is gratifying to note that while the number of nurses subsidised in terms of sections 14 (*b*) and 15 (*b*) has diminished the number of full-time district nurses and midwives has increased. Full-time district nurses are more satisfactory and of greater value to the community than subsidised nurses.

In the Cape Province the schemes for an entirely new hospital at Butterworth and a separate non-European hospital at Port Elizabeth are progressing and it is understood that the Administration has approved in principle of an entirely new hospital in Uitenhage.

In the Natal Province no additional accommodation has been provided but, as far as is known, the hospital needs of the Province are receiving the serious consideration of the Administration.

6. Dental Services.

The main activities of the dental health officer during the period under review were concerned with dental research and dental health education.

Table 43.—District Nursing Service : Nurses, Midwives, Non-European Nursing Assistants as at 30th June, 1945, in respect of whom Subsidies or Part-refund of Salaries are Paid, compared with the Totals as at 31st December, 1935.

Race.	Part-refunds under Section 14 (*a*).		Subsidies under Section 14 (*b*).		Part-refunds under Section 15 (*a*).		Subsidies under Section 15 (*b*).		Part-refunds to Provincial Administrations under Section 13.		
	1935.	1945.	1935.	1945.	1935.	1945.	1935.	1945.	All Provinces, 1935.	Cape, O.F.S. and Transvaal Provinces, 1945.	Natal Province.* 1944.
European	23	86	7	44	—	9	—	—	—	125	15
Native	2	20	—	—	11	101	3	97	—	29	11
Coloured	—	16	1	5	—	—	—	2	—	11	—
All Races	25	122	8	49	11	110	3	99	—	165	26

* Data in respect of Natal not yet available for 1945.

5. General Hospitals.

The system of advising Provincial Administrations on hospital matters has been continued. All the Administrations have now appointed their own medical inspectors of hospitals and routine inspections of general hospitals are consequently no longer carried out by medical officers of this Department. The Department in consultation with the Department of Public Works nevertheless was able to advise Provincial Administrations on new hospital schemes or extensions to exsiting hospitals. During the year a notable advance in hospital administration in the Union was made by the setting up of the " Central Health Services and Hospitals Co-ordinating Council ". This Council consists of eight members, four of whom are appointed by this Department and one by each of the four Provincial Administrations, on the understanding that the delegates may be accompanied by their advisers. The function of this council is to advise upon the correlation and co-ordination of hospital services and all other personal health services in the Union. It will be appreciated that this council provides most useful machinery for co-ordinating such matters as, for example, conditions of service and salaries of all staff connected with these services ; the training of personnel for these services, and such subjects as may be referred to it by the Central Government or the Provincial Administrations. It is anticipated that the work of this council will be instrumental in bringing about a much more satisfactory hospital and personal health service in the Union.

In the Transvaal Province a comprehensive survey of the hospital accommodation needs has been carried out by the Provincial Administration and a complete programme of work extending over a number of years has been prepared. This scheme of extensions in the Province will no doubt be carried out as expeditiously as practicable.

In the Orange Free State the Administration has approved of small hospitals at Frankfort and Parys.

Dental Research.

Having completed the surveys and field work in connection with the incidence of dental caries among European school children in South Africa, the dental health officer is now chiefly engaged in the investigation of the causes of the high incidence of dental caries in different areas in South Africa. White rats and baboons are used for these experimental purposes. These investigations are conducted to ascertain to what extent the diet, drinking water (including fluourine), etc., affect dental decay and what preventive measures could eventually be recommended to reduce the serious ravages of dental disease.

It was found from the abovementioned surveys that the diet plays the most important role in dental decay and these investigations may assist in selecting a suitable diet to reduce the incidence of caries. It is hoped to determine whether an optimum diet affects the calcification of the teeth making them more resistant to caries or whether the diet affects the activities of the mouth organisms causing dental caries.

It was also found that small amounts of fluourine in drinking water reduce the caries incidence. This has been proved by similar findings in other countries. The effect on dental caries of flourine in drinking water and of the local application of fluorine to the teeth, forms part of these experiments. Another important aspect of prevention by means of fluorine is to ascertain the optimum amount of fluorine in drinking water, which will be beneficial to the teeth, but will not cause mottling. Experiments on similar lines are also being conducted in America and small amounts of fluourine are added to public water supplies in order to reduce dental decay. The question as to whether fluourine produces caries resistant teeth or whether it has a bactericidal action in the mouth is being investigated. Different fluourine compounds are employed in these experiments to determine their toxicity, assimilability, absorption and their effects on teeth and bones. The Department is preparing suitable dental

health education material to be distributed in the endemic fluorosis areas, warning people of the dangers of excess of fluorine in drinking water. As it has been found that in areas where the drinking water is hard the caries incidence is lower that in areas where the drinking water is soft, experiments are being conducted to ascertain the effect of hard and soft waters on dental caries and calcification of teeth.

The effect of different diets on periodontitis and their probable causes are being investigated.

Dental Health Education.

As far as dental health education is concerned, much of the dental health officer's time was taken up in the production of a black and white sound and a silent colour film on dental caries in South Africa for educational purposes. The film was produced by the Film Division of the Union Education Department. Copies of the black and white sound film have been made and are ready for distribution to the schools and other interested bodies. A series of slides on dental health education to be shown in cinemas in South Africa have been prepared. The South African Red Cross Society has been approached to have these slides exhibited in the cinemas.

A number of coloured slides for dental health lecturing purposes have also been prepared.

7. The South African Medical Council.

The half-yearly meetings of the council were held in October, 1944, and March, 1945. These meetings occupied four days each. The executive committee met on nine occasions during the year, the meetings occupying 12 days in all.

The following committees also met :—

	Meetings.
The Medical, Dental, Education, Examination and Registration Committee	3
Specialists Committee	3
Dental Committee	2
Medical Auxiliaries Committee	1
Nurses, Midwives and Masseurs, Education, Examination and Registration Committee	2

The following table indicates the number of registrations and restorations effected during the year under review.

Registrations and Restorations.

	Registered.	*Restored.*
Medical Practitioners	294	19
Specialists	30	—
Dentists	14	3
Medical Students	342	2
Dental Students	43	—
Masseurs	5	1
Physiotherapists	10	—
Radiographers	2	—
Dental Mechanicians	8	—
*Medical and Surgical Nurses	374	51
*Male Nurses	10	2
*Mental Nurses	27	57
*Nurses for Mental Defectives	12	9
*Fever Nurses	7	—
*Midwives	11	44

* Period 1st July, 1944, to 7th November, 1944.

Of the 294 medical practitioners registered, 263 qualified at South African medical schools and 31 held overseas qualifications. Of the 374 medical and surgical nurses 20 held overseas qualifications. Of the 27 mental nurses 4 held overseas qualifications. Of the 11 midwives 11 held overseas qualifications.

The following table indicates the number of persons whose names appeared in the various registers kept by the council as at 30th June, 1945 :—

Medical Practitioners	4,461
Dentists	772
Medical Students	1,605
Dental Students	112
Masseurs	114
Dental Mechanicians	129
Physiotherapists	12
Radiographers	4

The functions of the council in regard to nurses and midwives ceased on 8th November, 1944, the date fixed by the Minister by proclamation in the *Government Gazette* as the date from which the Nursing Act of 1944 became effective. On that date the Nursing Council took over all functions of the Medical Council relating to nurses and midwives. This council lent the Nursing Council part of its offices and equipment for a period of four months to assist it in its early stages.

The following tables show the numbers of candidates who presented themselves for the various examinations for nurses conducted by the council up to the time the Nursing Council commenced to function and the numbers who passed. The last of these examinations were held in October, 1944, and as the results were not published when the Nursing Council commenced to function all of the relevant documents were passed to that body which published the results and effected the subsequent registrations. This council subsequently paid to the Nursing Council the sum of £550 as an *ex gratia* payment in respect of examination fees received for those examinations. Statistics for those examinations are not included in the following table.

Examinations.	Candidates Examined.	Passed with Honours.	Passed.	Failed.
Medical and Surgical Nurses.				
Final	184	7	146	F. 10 * 16 † 5
Preliminary	384	29	212	143
Male Nurses.				
Final	3	—	2	* 1
Preliminary	5	—	3	2

F. Failed.
* Passed oral and practical only.
† Passed written only.

Many applications for the registration of specialists were considered by the Council and the number of practitioners given hereunder were registered as specialists in the following specialities :—

Medicine	3
Surgery	8
Aneasthetics	3
Dermatology	2
Obstetrics and Gynaecology	1
Otorhinolaryingology	3
Orthopaedics	3
Pathology	1
Psychiatry	3
Radiology and Electrotherapeutics	2
Physical Medicine	1

The following new registers were opened during the year in terms of section 32 of the Medical, Dental and Pharmacy Act No. 13 of 1928 :—

(*a*) Register of Physiotherapists.
(*b*) Register of Radiographers.
(*c*) Register of Optometrists.

No registrations had been completed in respect of Optometrists at the end of the period under review.

The Council has submitted to the Minister a draft Bill to amend the Medical, Dental and Pharmacy Act No. 13 of 1928 to provide for the compulsory registration of certain classes of persons engaged in callings concerned with matters relating to the treatment or preventing of physical defects or disease in man. The Council has urged the Government to proceed with this Bill at the next Session of Parliament.

Numbers of complaints against registered persons still continue to be received. During the year seven formal enquiries were held; five into the conduct of medical practitioners, one into the conduct of a dentist and one into the conduct of a midwife. One of the medical practitioners was erased from the register, one was suspended from practice for a period of 14 days, one was reprimanded and cautioned, one was cautioned and one was found not guilty of the charge brought against him. The dentist's name was erased from the register and the midwife was cautioned.

Numerous other cases were investigated and in most cases they were settled to the satisfaction of the parties concerned. A number of other complaints were found to be illfounded or not of sufficient seriousness to justify the holding of enquiries.

The Dental Mechanicians Act was passed by Parliament in June, 1945. Under this Act the functions of the council in regard to dental mechanicians will cease on a date to be fixed by the Minister as the date on which the Dental Mechanicians Board is established. Those functions will then be taken over by the Dental Mechanicians Board established under the Act.

8. The South African Pharmacy Board.

The half-yearly meetings of the Board were held in July, 1944, and January, 1945, and special meetings of the Board were held in October, 1944, and April, 1945. Each of the meetings lasted four days with exception of the one in April which occupied three days. Meetings of the Committees of the Board were held in conjunction with the meetings of the Board itself.

During the period under review 45 chemists and druggists, 38 managing directors of companies carrying on the business of chemists and druggists and 142 apprentices were registered. Of the chemists and druggists registered 43 held the qualifying certificate of the Board and the other two held the certificate of the Pharmaceutical Society of Great Britain. The following table indicates the number of registrations, restorations and erasures effected during the period under review :—

Registrations, Restorations and Erasures.

	Chemists and Druggists.	Managing Directors.	Apprentices.
On Register, 1/7/1944..	1,615	155	334
Registrations.....	45	38	142
Restored to Register..	7	—	—
	1,667	193	476
Erasures—			
Due to death.....	15	3	1
Others.....	12	22	82
	1,640	168	393

Examinations were held in December, 1944, and June, 1945. The following tables show the results of these examinations :—

Preliminary Scientific Examination.

Examination.	No. of Candidates.	Passed.	Failed.	Referred.		
				Botany.	Chemistry.	Physics.
Whole Examination.....	170	63	65	5	20	17
Botany.....	1	1	—	—	—	—
Chemistry.....	28	20	8	—	—	—
Physics.....	14	7	7	—	—	—

Qualifying Examination.

	No. of Candidates.	Passed.	Failed.	Referred.		
				Chemistry.	Pharmacy.	Dispensing.
Whole Examination.....	115	29	46	20	13	7
Chemistry.....	28	10	18	—	—	—
Pharmacy.....	13	13	—	—	—	—
Dispensing.....	12	9	3	—	—	—

The Board received a number of complaints of unprofessional conduct on the part of registered chemists and druggists and it was necessary on four occasions to hold formal enquiries. In all of these cases the accused were found guilty of the charges brought against them. In one case the decision of the Board was that the name of the chemist and druggist concerned be erased from the register, such erasure to be suspended for a period of twelve months subject to the behaviour of the chemist and druggist being satisfactory. If the Board was satisfied with the conduct of that person during the 12 months the sentence would lapse. In the other three cases, the accused persons were cautioned.

The Board is giving consideration to the revision of the system of training and examination of persons wishing to qualify as chemists and druggists and a sub-committee was appointed to go into the whole matter. The sub-committee has met on several occasions and hopes to present a final report early next year.

The Board has given a great deal of consideration to the formulation of a scheme to provide special facilities for ex-volunteers who wish to qualify as chemists and druggists. It is proposed to submit a draft war measure and appropriate rules to the Minister for his approval and pomulgation. This scheme was arrived at in close consultation with the Honorary National Advisory Committee (Pharmaceutical) to the Directorate of Demobilisation. The Board's rules are being relaxed to provide for a shorter apprenticeship for apprentices who have rendered full-time military service.

9. The South African Nursing Council.

On the 8th November, 1944, the Nursing Act, No. 45 of 1944, came into operation and the South African Nursing Council consisting of 24 members was established, with effect from that date in terms of Government Notice No. 1801 of the 27th October, 1944. The functions of the South African Medical Council in regard to nurses and midwives ceased on that date and have since then been exercised by the Nursing Council.

The inaugural meeting of the Council was held at Pretoria on 8th November, 1944. The Hon. the Minister of Welfare and Demobilization opened the proceedings. The following office bearers were elected at this meeting :—

Chairman : Miss C. A. Nothard, R.R.C.
Vice-Chairman : Mrs. V. M. L. Ballinger, M.P.
Treasurer : Mr. H. Barnes.

The full Council subsequently met in Cape Town in March, 1945, and re-elected its office-bearers for the succeeding twelve months.

Under the provisions of the Nursing Act the Council appointed an Executive Committee which has met in Pretoria at monthly intervals.

During the first months of its existence the Council devoted a considerable portion of its time to establishing the necessary mechanism wherewith to carry out its functions and drafting the following regulations :—

- Regulations regarding the Qualifications and Conditions for Admission to the Registers of Nurses and Midwives.
- Regulations regarding the Keeping of Registers and the form thereof.
- Regulations regarding the Registration of Additional Qualifications.
- Regulations regarding the Distinguishing Devices for Registered Persons.
- Regulations regarding the Registration of Student Nurses and Student Midwives.

The Council has also drawn up regulations for the conduct of its business. As far as regulations relating to the training and examination of nurses and midwives are concerned it has availed itself of the provision contained in the Nursing Act whereby any regulations made under the Medical Act and in force on 8th November, 1944, continued in force until revoked by the Minister.

Besides attending to matters of a routine nature the Council is working on a scheme which will involve fundamental changes in the training of nurses and midwives as hitherto conducted in the Union. This scheme involves briefly (*a*) the establishment of Nursing Colleges throughout the country where students will attend for specified periods during their course of training for the purpose of receiving intensive instruction in the theoretical and practical aspects of nursing or midwifery and (*b*) the affiliation of groups of hospitals for training purposes and the provision for students to be transferred from one hospital to another in the same group during their training.

As essential factors for the implementation of this scheme it is necessary that student nurses and student midwives should be treated as students and not as a form of cheap labour during their course of training and subdepartments of nursing educations or some similar organisations should be established in the Provincial Administrations to assume financial responsibility for the training, as such, of nurses and midwives in hospitals and nursing colleges.

The Council believes that its scheme will result in both an improvement in the standard of nursing and midwifery services and a considerable increase in the number of nurses and midwives available to the community. Representatives of the Council have interviewed the Minister of Welfare and Demobilization and the Central Health Services and Hospitals Co-ordinating Council with regard to the revision of the training of nurses and midwives. In view of the exsiting serious shortage of nurses and midwives the Minister and the Provincial Administrations have sympathetically considered the proposals put forward by the Council and a strong possiblity exists that they will be implemented in the not too distance future.

10. Administration of the Medical, Dental and Pharmacy Act, No. 13 of 1928.

Habit-forming Drugs.

The exports of narcotic drugs to the adjoining territories were :—

Medicinal opium	½ lb.
Opium in the form of extracts and tinctures	$24\frac{1}{10}$ lb.
Morphine	½ lb.
Diacetylmorphine	$1\frac{3}{4}$ oz.
Cocaine	¾ lb.

Departmental inspectors, due to additional duties placed upon them have been unable to carry out, in all areas, the regular systematic inspections of records relating to habit-forming drugs which in terms of Chapter VI of the Medical, Dental and Pharmacy Act, must be maintained by medical practitioners, dentists, chemists and druggists and authorised veterinarians. Inspections, however, have been carried out in the larger centres and revealed that in the majority of cases the requirements of the Act had been observed. In a few cases, and only after due warning had been given, were prosecutions instituted for contravention of the law.

Posions.

The inspection of general dealers' premises has been carried out by departmental officers as well as the curtailment of transport facilities would allow. It was found that general dealers were prone to disregard the relevant provisions of Act No. 13 of 1928 in the absence of regular inspections of stocks of poisions and records pertaining to their sale. Cases came to light of poisons being stored with foodstuffs, being sold without any record being kept of their sale and not being adequately labelled so as to bring to the notice of the public their dangerous nature. Prosecutions were instituted against all offenders in this respect.

During the course of the year under review, the Department's attention was frequently drawn to instances where medicines containing poison and drugs falling within the scope of the poisons schedule were sold by chemists and druggists to members of the public without the precaution of labelling the products with the word "poison" as is required by law. In the public interest, provision is made under Act No. 13 of 1928 to permit of this practice in the case of poison contained in medicine dispensed by a chemist and druggist, with the added safeguard, however, that the quantity of each ingredient together with the name of the person to whom it is sold or supplied and the date of supply is recorded in the prescription book maintained by the chemist. The label on the medicine thus should bear the full directions for use. The provisions of the Act in this respect were contravened mainly by chemists selling the sulphonamide group of drugs. The sale of sulphonamide drugs or sulphonamide containing products for internal and external use without a prescription from a medical practitioner should not be practised. The drugs can be used safely only under expert supervision and at a physician's directions. So many untoward and unfavourable reactions have recently been brought to light from indiscriminate and even therapeutic use under medical supervision of this group of drugs that the Department views the present practice with concern and should this unsatisfactory state of affairs continue, it will necessitate very strong measures being taken to safeguard all concerned.

Table 44.—Prosecutions and Convictions under Laws relating to Habit-forming Drugs during the Year ended 30th June, 1945.

Province.	European.		Native.		Asiatic.		Other Coloured.		Total.	
	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.
Cape	47	43	1,000	920	12	10	1,068	1,034	2,127	2,007
Natal	14	14	2,771	2,689	160	157	213	206	3,158	3,066
Transvaal	47	42	3,842	3,685	17	17	274	259	4,180	4,003
Orange Free State	4	4	294	280	—	—	12	12	310	296
Union	112	103	7,907	7,574	189	184	1,567	1,511	9,775	9,372

The total number of prosecutions in the Union amounted to 9,775 of which 9,768 were in respect of violations of the laws relating to dagga and 7 on account of other habit-forming drugs. In the course of investigations into illicit traffic in drugs large quantities of dagga were seized. The quantity was destroyed by burning after legal proceedings in the matter had been completed. Small amounts of opium and other narcotic drugs illegally imported into the country through Union ports were confiscated and were disposed of by informal tender to firms of manufacturing chemists and druggists.

The following quantities of narcotic drugs were imported into the Union during the year :—

Opium in the form of extracts and tinctures	35 lb.
Indian hemp in the form of extract	$14\frac{1}{4}$ lb.
Morphine	$43\frac{3}{4}$ lb.
Diacetylmorphine	$44\frac{1}{2}$ lb.
Cocaine	$73\frac{1}{3}$ lb.

11. Administration of the Food, Drugs and Disinfectants Act, No. 13 of 1929.

During the year delegated powers under section 2 (3) of the Food, Drugs and Disinfectants Act were conferred upon the Local Health Commission of Natal in respect of the Public Health Areas of Clermont and Edenvale (in terms of Government Notice No. 1270 of the 12th August, 1944), and upon the Town Councils of George (Government Notice No. 1373 of the 25th August, 1944), Cradock (Government Notice No. 1548 of the 22nd September, 1944), and Hercules (Government Notice No. 989 of the 15th June, 1945). The total number of local authorities exercising delegated powers under the Act as at the 30th June, 1945, was, therefore, 38.

The delegation in the case of the Local Health Commission constituted a departure from past practice in that such delegations have hitherto been dependent upon the size of the European population only whereas in the case of the Commission the large non-European population of the two areas was the deciding factor, apart from the existence of qualified staff. The quota of samples which may be examined free of charge in Government chemical laboratories was fixed at 88 per annum in respect of the Local Health Commission.

For the first time since the year ended 30th June, 1941, the total number of samples examined exceeded 5,000, the actual number, namely, 5,083, as reflected in the accompanying table, exceeding the number examined during the previous year by 471, i.e., an increase of about 10 per cent. While the total falls far short of the number (6,154) examined during the last pre-war year, the increase is indicative of greater activity evinced in connection with the administration of the Act.

Table 45.—Samples taken for Examination or Analysis under Act No. 13 of 1929, during the Year ended 30th June, 1945, and the Results.

Place.	Total Taken.	Number Analysed or Examined.	Number Found Adulterated or Incorrectly or Falsely Described.	Prosecutions.	Convictions.
Ports of the Union	73	73	46	—	—
Cape Province	1,720	1,710	328	113	90
Natal Province	457	457	14	7	4
Transvaal Province	2,599	2,586	470	174	146
Orange Free State Province	234	234	32	18	18
Total	5,083	5,060	890	312	258

12. Nutrition.

During the past year the National Nutrition Council and its standing committees held regular meetings to discuss matters in connection with the carrying out of its function which is defined as follows in section *six* of Act No. 14 of 1940 :—

> " . . . to investigate and report to the Minister of Public Health upon all matters relating directly and indirectly to the prevention of malnutrition in and the improvement of the diet of the inhabitants of the Union which, in its opinion, should be investigated or which the said Minister may refer to it for investigation ".

The first report on the activities of the Council during the period 27th June, 1940, to 31st December, 1943, will shortly be followed by the second report.

Matters of particular interest dealt with during the year under review include :—

(1) The establishment of a Nutrition Bureau, which will be the centre of information on all matters relating to nutrition. The Bureau will be the nerve centre of nutrition education for the whole Union and will be open to all sections of the public.
(2) The preparation of a comprehensive nutrition research programme.
(3) The production of margarine. Margarine is now being produced on a limited scale for distribution to a section of the lower income group of the population.
(4) Co-operation with the newly established Food Supplies Council.
(5) The food position in the Transkeian and Ciskeian Territories.
(6) The distribution of citrus through the Feeding Services of the Department of Social Welfare.
(7) The controlled distribution of food.
(8) The food resources of the Union.
(9) Agricultural production in relation to the needs of the population.
(10) The maize industry.
(11) The dairy industry.
(12) Encouragement of the consumption of fruit.
(13) Goitre.
(14) Establishment of vegetable and fruit clubs.
(15) Representation of additional organisations on the Council and its committees.
(16) Food yeast and the use thereof in staple articles of diet.
(17) Information about nutrition work in Europe.
(18) School feeding.
(19) Revision of dietary standards.

As the work of the Council has been expanding rapidly, consideration has been given to increasing the number of staff units in the Nutrition Section of the Department and posts of Principal Professional Officer (Nutrition) ; Professional Officer (Economics), Assistant Professional Officer (Dietetics), and Clerical Officers remain to be filled.

The Council's educational programme has received a tremendous impetus and expenditure in connection with production of suitable material is rising by leaps and bounds. This work is expected to increase on a large scale in future.

The Nutrition Officer (Dr. J. M. Latsky) has travelled extensively to carry out investigations for the Council and to advise various authorities on matters of nutrition and to spread propaganda. Special reference has to be made of the assistance rendered to the Department of Native Affairs in connection with the nutritional position in the Native Territories where conditions are serious as a result of the severe droughts in those regions and the scarcity of maize which is the principal article of diet of the natives.

Invitations have also been extended to Dr. Latsky to visit neighbouring territories for the purpose of advising the authorities on the nutrition of the people.

Dietetics.

The available units have continued to give lectures, talks and demonstrations to the public upon request. They have also continued to carry out inspections of institutions and feeding arrangements in various parts of the country.

13. D.D.T.

The attention of all civilised countries has, during the past few years, been focussed on that amazing new insecticide D.D.T. (Dichlor-diphenyl-trichlorethane) a relatively simple synthetic organic compound possessed of remarkable properties and unique insecticidal powers. First synthesised in 1874 its insect-killing properties were not discovered until 1940, but in 1942 intensive research in Britain and America established its value beyond all doubt as an insecticide of the highest importance. It has already won a great name in military hygiene, and the discovery of its insecticidal properties has been hailed as one of the few momentous medical discoveries of the war. So successful did D.D.T. prove in overcoming the typhus fever epidemic in Italy and the mosquite menace in the Pacific theatre of war that this spectaculer insect killer promises to be a boon to humanity when supplies become generally available. In the war against the most dreaded insect carriers of disease D.D.T. appears to have provided the world with the greatest single weapon so far developed.

D.D.T. first came into prominence in 1943 when it was used on a large scale, and with signal success, in the typhus fever outbreak in Naples. During a single month 1,300,000 (72,000 on the peak day) civilians were dusted with it and within three weeks the outbreak was completely brought under control. D.D.T. has thus made medical history, as never before has a typhus fever epidemic been arrested in Europe in midwinter. Shortly thereafter all troops in Europe were issued with garments impregnated with D.D.T. These garments gave protection against lice for at least two months and withstood several launderings without

vital loss of activity of the D.D.T. The most important war use of D.D.T., however, was the protection it afforded the troops in the Pacific theatre of war against malaria. Where formerly large areas in this war zone were virtually rendered untenable by their enormous populations of malaria-carrying mosquitoes, the addition of D.D.T. to larvacidal oil produced a larvacide of such potency that it overcame this menace, and that with only a fraction of the oil previously used. So effective did it prove that an American medical officer of high rank, in a report submitted, aptly stated " To-day if we locate one mosquito we consider it comparable to finding a four-leaf clover. To me, this is the most outstanding achievement of medical science in this war ".

When the first reports of the efficacy of D.D.T. were received, this Department, realising its immense potentialities in public health work in this country, took the initiative in investigating the feasibility of producing D.D.T. in the Union. Thanks to the fruitful co-operation between the Departments of Public Health, Defence and Agriculture a pilot plant was erected, and soon thereafter plans for large scale production were set afoot. Close liaison was established with the British and American Governments who rendered all possible assistance. Intensive laboratory and field tests carried out by chemists, entomologists and malariaologists in this country confirmed that the faith of research workers in Britain and America was justified. D.D.T. was soon shown to be a unique compound with properties far superior to those of any other insecticide hitherto used in South Africa. The factory which has been erected will shortly be producing sufficient to meet the needs of the different Government departments and the public.

If the war-time uses of D.D.T. were manifold, the peace-time uses in South Africa and elsewhere are likely to be considerable, and new fields of application are being discovered frequently. The control of disease-carrying insects and of vermin affecting man, and the disinfestation of property, embrace such insects as mosquitoes, houseflies, lice, fleas, bed-bugs and possibly ticks and cockroaches. D.D.T. has wide uses in agriculture. It has also been incorporated by certain manufacturers in oil-bound water paints and floor polish.

In this country where typhus fever constantly presents a problem in the Transkei, the use of D.D.T. will be of immense value and will result in dispensing with the old cumbersome methods of disinfestation hitherto used for the control of this disease. One of the virtues of D.D.T. lies in its case of application, an important factor when thousands have to be treated in the shortest possible time. No other known delousing method can hope to approach the number that can be treated with D.D.T. in a single day. Used as a dust the speedy application to large numbers of infested people will check an epidemic. It is also a most effective way of keeping unaffected persons louse-free for an extensive period under difficult conditions such as exist in the Transkei and other inaccessible areas. Furthermore it should be possible to impregnate the garments and blankets sold to natives, a measure which has been found practicable and effective during the war.

D.D.T. is undoubtedly revolutionising malaria control, and has been successfully employed in the Pacific and Burma war zones where areoplanes were used for spraying D.D.T. in oil on to the swampy and jungle terrain. Investigations to establish the value of aeroplane spraying in this country are being carried out, and the results will be eagerly awaited so as to assess to what extent the reputation of D.D.T. as an adulticide and larvacide, when applied to the needs of the civilian rural population, is justified. It can be stated, however, that the work carried out by army and other investigators in other parts of the world has been most promising and the results extraordinarily good. D.D.T., used as a spray in dwellings, will be most valuable for the control of adult mosquitoes in the malarial areas. The residual effect will obviate daily spraying as has hitherto been done with pyrethrum preparations; or D.D.T. can be combined with the latter to obtain the knock-down effect of pyrethrum and the killing power of D.D.T. While the results to date, in so far as mosquito destruction with this product are concerned, have been ahead of expectations, much has still to be learned about the potentialities and limitations of this insecticide and the best methods for its practical application under the varied conditions encountered in the field and elsewhere.

Properties.

The pure synthetic insecticide para-para-dichlor-diphenyl-trichlorethane (D.D.T. for short) is a white crystaline substance with a weak fruity smell. It is virtually insoluble in water but is soluble in most organic solvents such as paraffin, carbon tetrachloride, benzene, etc. It is a very stable compound, is not decomposed by sunlight, air, water vapour or boiling water and is without effect on metals, fabrics, leather and dyestuffs. It has a low volatility which accounts for its persistence. Its novel properties are its stability and the power to kill without repelling such insects as rest for quite short periods upon surfaces treated with it. Its odourless residue maintains its toxicity to mosquitoes, flies and bed-bugs on sprayed surfaces longer than any other known insecticide.

Toxicity.

D.D.T. is toxic to man and animals when absorbed and is cumulative in its action. In powder form it is not toxic through external application to the skin and is not irritating. It may be toxic, however, when ingested and must be kept out of food. In various bland solvents such as paraffin and other mineral oils it is gradually absorbed and may cause poisoning, but even so the acute lethal dose is high. The most important toxic effects are produced in the liver causing necrosis of that organ, but the central nervous system may also be affected. There is no evidence however, that the substance has proved harmful to those who manufacture it, use concentrates of it or apply it in the field. The general consensus of opinion, based on experiments with animals and observations in man, is that D.D.T., used as an insecticide and with discretion, does not constitute a hazard to human health.

Mode of Action.

D.D.T. can be used as an insecticide in a variety of ways: (1) as a dust; (2) as a solution in some organic solvent; (3) as an emulsion. It is compatible with extracts of pyrethrum and with thiocyanate insecticides (Thanite and Lethanes). D.D.T. is a contact poison, the solid material penetrating the surface of insects causing paralysis of the nervous system. As it is not a repellant insects do not avoid D.D.T. treated surfaces, nor do they show immediate ill-effects after having come into contact with it. D.D.T. has no immediate "knock-down" effect, but, once contacted, is fatal. Furthermore its residual effect is such that films deposited on walls and other resting places remain toxic to flies, mosquitoes, bed-bugs and other insects for weeks, or even months. Mosquito larvae that swallow or come into contact with the power or in lavacidal oil sprayed on water surfaces become paralysed and die. D.D.T. is not ovidical nor fungicidal and has no fumigant affect.

Uses.

The established uses of D.D.T. in public health work are for the extermination of mosquitoes, lice, flies, bed-bugs, fleas and cockroaches. While cattle ticks are susceptible to D.D.T. in the form of an emulsion, *ornithodorus mouabata*, the vector tick of relapsing fever appears to be resistant to the present preparations of D.D.T.

A pamphlet will in due course be issued by the Department in which the uses and methods of application will be set out.

14. Meat Supplies.

As indicated in Table 46 the number of cattle and pigs slaughtered was considerably less than during the previous year. The percentage of pigs condemned for tuberculosis was considerably higher than last year, while the percentage condemned for measles was lower. For cattle the percentages of condemnations were very similar to those last year, both as regards tuberculosis and measles.

It will be seen that the amount of meat which has to be condemned is, in the aggregate, very considerable. As far as measles is concerned this is a reflection of the

insanitary conditions prevailing in the rural areas and Native Territories. This Department has persistently advocated that sanitation of a simple type should be introduced on farms for the use of the native labourers and that the farmers should insist that such sanitation is used. This is admittedly long range policy but a beginning must be made, and, until such time as the sanitary habits of the rural native population have much improved, there is no prospect of reducing the serious wastage of meat at present taking place due to measles.

TABLE 46.—NUMBER OF ANIMALS SLAUGHTERED AT ABATTOIRS AND CONDEMNED BY LOCAL AUTHORITIES IN THE UNION ON ACCOUNT OF MEASLES AND TUBERCULOSIS DURING THE YEAR ENDED 30TH JUNE, 1945.

	Number Slaughtered.	Number Condemned (Tuberculosis).	Number Condemned (Measles).
Swine.....	129,028	652 (0·505%)	2,337 (1·81%)
Bovines.....	334,353	330 (0·098%)	1,689 (0·505%)
TOTAL.....	463,381	982 (0·212%)	4,026 (0·869%)

VII.—ACKNOWLEDGMENTS.

My thanks are due to all other Government Departments and their officials (especially Magistrates and Native Commissioners), the South African Railways and Harbours Administration, the four Provincial Administrations, and local authorities. The Departments of Native Affairs and Defence, and the Railways Administration were particularly helpful to the Department in its efforts to control the epidemic of typhus in the Transkeian and Ciskeian Territories during the year. Thanks are due also to the South African Institute for Medical Research, the South African Medical Council, the South African Pharmacy Board, and the Medical Association of South Africa.

Further, I wish to express my thanks to Dr. H. O. Hofmeyr of the Union Government Scientific Mission in Washington, and Col. P. G. Stock of the Ministry of Health, London, for their indefatigable work in the interests of the Department in the international sphere and for keeping the Department posted in regard to developments overseas in the field of public health and medicine.

Finally, I should like to express my appreciation of the loyal and efficient manner in which the staff of the Department has carried out its duties during a very difficult year. In particular, I should like to thank Dr. B. M. Clark, Deputy Chief Health Officer, for sub-editing this report.

I have the honour to be,

Sir,

Your obedient Servant,

PETER ALLAN,
Secretary for Public Health.

Pretoria,
29th December, 1945.

Annexure.

PLAGUE IN NGAMILAND, BECHUANALAND PROTECTORATE.*

HISTORY OF THE OUTBREAK.

A number of sudden deaths in the first week of October, 1944, in the village of Sehitwa on the north-eastern edge of Lake Ngami was the first indication of an epidemic of plague which was destined to be the largest outbreak in Southern Africa on record. Shortly after the outbreak began in the Lake Ngami area, cases and deaths from plague were discovered in the Makalamabedi area on the upper reaches of the Botletle River, about 60 miles east of Lake Ngami, and in the Rakops area, 100 miles further down the Botletle River. Some 15,000 persons were at risk in these three areas.

When the first suspicion of plague was reported the Director of Medical Services and the Deputy Director of Medical Services were on the point of making a tour of Ngamiland. Plague had not been diagnosed but the District Commissioner at Maun had little doubt about it and had acted on the assumption that it was plague, instituting control measures to meet the emergency. Sir Walter Johnson and Dr. Mackenzie left Francistown on 16th October with a supply of anti-plague vaccine. Investigations, first at Makalamabedi and then at Lake Ngami, soon left no doubt as to the nature of the disease; mass immunisation was put in hand, an anti-rodent staff was hurridly got together, hut-spraying was begun to be followed later by cyanogassing. Each of the outbreak areas was quarantined and inter-kraal movement was prohibited. Deverminisation stations was set up and the transport of mine natives through the infected areas was controlled. No suspicious illness was discovered in the vicinity of Maun or further north, nor between Lake Ngami and Mohembo but the Medical Officer (Serowe) who had been detailed to investigate the Rakops area reported plague there and between Rakops and Makalamabedi on the river road.

EPIDEMIOLOGY.

The epidemic was at its height in the Lake Ngami area during October, in the Makalamabedi area during October and early in November and in the Rakops area during November and December. By the middle of November it was almost over in the two former areas, but continued sporadically in the Rakops area into March, 1945. In Table I the number of cases and deaths reported weekly to 26th December, 1944, are combined into number per four-weekly periods to indicate the general trend of the epidemic.

TABLE I.—CASES AND DEATHS FROM PLAGUE IN NGAMILAND TO 26TH DECEMBER, 1944.

Four Weeks Ending on	Lake Ngami.		Makalamabedi.		Rakops.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
31st October.....	77	30	21	16	16	16	114	62
28th November.....	59	16	40	19	34	19	124	54
26th December.....	3	3	14	11	49	26	66	40
TOTAL.....	139	49	76	56	89	63	304	156

* Extrtaoted from Report on the survey of Ngamiland.

The case mortality was probably nearer 60 per cent. than 50 per cent. as indicated in the records; a mortality comparable to that experienced in the Union, but in direct contrast to that in the only other endemic area in the Kalahari in Ovamboland. In Ovamboland the mortality rate is low and has rarely exceeded 25 per cent.

The majority of cases were of the bubonic type. There was also a number of severe cases, invariably fatal, of septicaemic plague, some of which were undoubtedly pneumonic. Few of these were seen before death.

The source of infection in the majority of cases was from plague-infected fleas in the huts. The majority of the fleas were without rodent hosts for much of the epidemic. During the actual outbreak multimammate mice were relatively scarce and on the whole there was little evidence of really heavy infestation of a permanent nature in the huts themselves. It is probable that the number of mice moving within the huts and granaries was very large at one time, i.e., at the end of winter following their rapid increase in numbers during the earlier winter months. Many of these would not take up their abode permanently in the huts themselves, but would be moving freely among the huts, within the kraals and the adjoining veld, where there was abundant harbourage in deserted gerbil burrows.

Main Features of the 1944 Epizootic.

The course of the gerbil epizootic throughout the whole of the Northern Kalahari was strikingly uniform. Epizootic decline in the gerbil population as a whole appears to have set in almost synchronously at the end of the summer of 1944 (April–May) or possibly earlier, but not before the unusually heavy rains during February. Plague appears to have been slowly disseminated throughout the gerbil population without causing marked diminution in density for several months before the epizootic gathered momentum to precipitate the downward trend. The multimammate mouse population had increased with explosive violence, culminating in a high density at the time the gerbil epizootic was at its height in the early winter (May–June). Here again, the intregrating influence of the unusually favourable season for increase of small rodents resulted in synchronous increase in multimammate mice over a wide area, but particularly in and around the Okavango Swamps and along the Botletle River. The flooding of the Swamps by the flood waters carried by the Okavango River from the Angola watershed between April and June further concentrated the already teeming multimammate mouse population causing overcrowding and food shortage. This lead to greater exploitation of the grain and other food in the villages and kraals. Towards the end of the winter, when the bulk of the multimammate mouse population was exploiting the food in and around the villages, the secondary epizootic amongst them was at its height. With the onset of warmer weather in September and October climatic conditions for the spread of plague from infected rodent fleas to man became more favourable and the human epidemic resulted.

Recommendations.

The following general recommendations are made:—

(i) Close liaison should be maintained between the Union Health Department and the Bechuanaland Medical Department with a view to (*a*) the exchange of information in order to co-operate routine investigations in both territories by the adoption of common survey and other field methods,

(*b*) enabling rodent staff from the two territories to gain experience of rodent and plague conditions outside their territories as opportunity or necessity arises, and (*c*) co-operating in the control of human outbreaks in an emergency.

(ii) In order to be prepared for future outbreaks and to follow the trend of plague in the rodent population throughout the Protectorate and to carry out systematic survey and rodent control work an anti-rodent staff of at least four permanent rodent inspectors is essential.

(iii) In order to discourage the harbouring of rodents in close contact with man and to protect supplies of food it is recommended that regulations be brought into effect to make it obligatory for shops and stores to be rendered rodent proof and that every effort be made to devise suitable means of protecting tribal and family stocks of grain. In this connection the wider use of tribal grain tanks is to be encouraged and the possibility of gradually replacing the 'basket' granaries by concrete 'drain-pipe' bins or galvanised iron bins might be considered. Most of the shops and stores in Ngamiland could be made proof against multimammate mice by substituting concrete floors for wood or earth floors.

(iv) Every effort should be made to enlist the co-operation of the Chiefs in (*a*) educating their people as to the nature of plague and the manner of its spread and (*b*) in setting up tribal anti-rodent squads to work under the supervision and direction of the rodent inspectors. While poisoning and gassing need to be done under strict supervision of a rodent inspector trapping, when cheap traps become vailable, could be done by a tribal organisation.

(v) Although the cyanogas process is the method par excellence for destroying plague-infected rodents and fleas considerable use could be made of poison and traps during inter-epizootic periods. It is recommended that modern techniques of large scale poisoning be tried out under experimental conditions.

(vi) D.D.T. holds out great possibilities for the control of insect-borne diseases and would be specially valuable amongst the primitively housed population of Ngamiland. Applied as a spray (saturated solution of D.D.T. in paraffin) or as a dust (5 per cent. in talc or other suitable powder diluent) it should be equally effective. The spray would be most suitable for treating flea-infested floors and the dust for blankets, clothing and possibly grain bins (as D.D.T. is toxic if ingested treatment of grain should be undertaken circumspectly). It is suggested that carefully controlled experiments be carried out to determine the best means of practical application with a view to devising a technique which will deal not only with fleas but also with flies, mosquitoes, bugs, etc., at the same time. Special attention should be paid to studying its residual effects; for this house-fly index might be devised as a measure of effectiveness.

In conclusion I should like, on my own and on Mr. Geldenhuys' behalf, to thank the authorities for the excellent arrangements that were made to enable us to make the fullest use of the short time at out disposal. Our special thanks are due to Dr. Mackenzie and to Dr. Freedman for the trouble they took to see that the expedition went smoothly and according to plan. It is a pleasure to record our appreciation of the hospitality shown to us by all with whom we came into contact, especially officers of the Bechuanaland Protectorate Police and Veterinary and Medical Departments and officials of the W.N.L.A.

I should also like to pay tribute to the drivers and lorry boys who accompanied us; without their cheerful participation in the arduous work of the survey less would have been accomplished.

Finally I should like to thank Captain Shortridge, Director of the Kaffrarian Museum, King Williamstown, for identifying the rodents and Dr. B. De Meillon, Department of Entomology, South African Institute for Medical Research, for identifying the fleas.

(Sgd.) D. H. S. DAVIS,
Government Ecologist.

13*th September*, 1945.